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## THE MORE IMPORTANT RECORDS FOR JUNE 1935

Hatching of grasshopper eggs in the Great Plains was very much retarded by cool, wet weather. The infestation in general is not nearly so serious as last year.

Rather extensive bands of Mormon crickets are moving toward cultivated areas in Moffat County, Colo., and a very extensive infestation is reported over the greater part of southern and central Idaho.

Cutworms were extremely destructive in the East Central, West Central, and Great Plains States. These insects were also reported from southern California.

Armyworm outbreaks occurred in the South Atlantic, East Central, and West Central States during the month.

General outbreaks of the alfalfa looper were reported from the Willamette Valley of Oregon and also from southwestern Colorado.

The Japanese beetle began to emerge in southern New Jersey the third week in June. This is decidedly later than usual.

The chinch bug outbreak in the East Central and West Central States was very materially reduced by cool, wet weather during the month. In part of the area the infestation was negligible.

The spring brood of the hessian fly was unusually heavy in the East Central States, with a general increase in populations westward to Kansas.

The European corn borer came through the winter normally over the greater part of its range.

The alfalfa weevil is more serious in Colorado than in any previous year. This insect is also abnormally abundant in Idaho, from moderate to heavy infestations are being reported from Utah, and light infestations from California.

Heavy infestations of hairy vetch by the vetch bruchid are reported from the Carolinas. This insect was also reported from Maryland and Pennsylvania.

The codling moth was generally retarded along the Atlantic seaboard, and over the greater part of the country infestations were reported as extremely light. From Colorado westward infestations were reported as heavier than in the East.

Egg laying by the first generation of the plum curculio was observed during the third week in June in the Fort Valley section of Georgia. Present indications are that there will be a heavy second brood this year in this section. In the Northern States this insect is comparatively scarce.

Although the oriental fruit moth is quite generally reported as scarce in the Eastern States, an unusually heavy infestation was reported from Mississippi.

The seed corn maggot, the cabbage maggot, and the onion maggot were destructively abundant in a number of localities in the Eastern and Central States. These outbreaks were associated with cool, wet weather.

From South Carolina to Kansas and southward blister beetles were unusually troublesome on a wide variety of truck and flower-garden crops.

The corn ear worm is occasioning more than the usual amount of damage in the Southern States and adults were observed as early as June 12 at Marietta, Ohio.

The Mexican bean beetle emerged about 2 weeks later than usual in the New England and Middle Atlantic States. By the end of the month this insect was generally destructive throughout its range.

Heavy infestations of peas by the pea aphid are reported from Connecticut and New York westward to North Dakota and southward to Mississippi.

The carrot beetle is appearing in destructive numbers from Michigan and Minnesota southward to Missouri and Kansas.

The pepper weevil, which was discovered in Manatee County, Fla., in May, was reported as increasing and to have destroyed 80 percent of the crop in certain fields at the end of June.

The boll weevil is reported generally over the South Atlantic and Gulf States. The infestations are rather spotted throughout the entire area.

The beet armyworm is seriously attacking cotton in Arizona, New Mexico, and western Texas.

The cotton leaf worm infestation was so heavy by the middle of June in the Gulf coast area of Texas that poisoning operations were necessary.

Unusually heavy infestations of the forest tent caterpillar are reported from the New England States westward to Minnesota.

An extensive outbreak of bagworms was reported from Tennessee and Alabama.

Severe infestations of larch by the larch case bearer were reported throughout New England.

THE MORE IMPORTANT ENTOMOLOGICAL FEATURES  
IN CANADA FOR MAY AND JUNE 1935

Cool, moist weather in the Prairie Provinces during May delayed the hatching of grasshopper eggs. The earliest hatching of the lesser migratory grasshopper and the two-striped grasshopper in Manitoba and of the lesser migratory grasshopper in Saskatchewan commenced about the end of the third week in May. Hatching of the roadside grasshopper in these two provinces started at the end of May. Up to the middle of June general cool, moist weather further delayed development, damage to crops was slight, and poisoning operations were limited. In Alberta, grasshoppers were reported just beginning to hatch in the first week of June and by mid-June they were abundant in only a few localities and had caused no damage. By June 25, light damage to crops was becoming evident in some localities in the three provinces, but was being held in check by poisoning. The grasshoppers are still a serious potential danger if the weather turns hot and dry, but the farmers are well organized to combat them. Hatching of the roadside grasshopper in the Kamloops district of British Columbia started on May 10 and was 75 percent complete by the end of May. .

The pale western cutworm, which has been in outbreak form over much of southern and central Alberta and Saskatchewan during the past several years, is again active in many sections, causing quite severe damage to spring wheat, particularly in the drier areas of the two provinces.

Cutworms of various species are unusually prevalent and abundant in southern Quebec and Ontario and are causing material damage, particularly to garden and truck crops.

Injury by wireworms is very general and unusually serious in Saskatchewan, especially in districts of medium and light soils. These insects are also generally abundant in southern Alberta, causing losses to grain and corn. Some damage to corn is occurring locally in southern Manitoba. Injury to tobacco crops by wireworms has been reported from Ontario.

Extensive and heavy flights of June beetles occurred in Ontario. The beetles caused much injury to the foliage of forest and shade trees and ornamentals.

Sod webworms are damaging spring grains and pastures in sections of southern Ontario.

Severe infestations of flea beetles have been reported on cruciferous crops in parts of southern British Columbia.

A very low winter mortality of the codling moth is indicated in southern Ontario and with favorable weather conditions the species will probably be an important pest this season. Emergence of adults began in the Niagara district on May 25.



Indications are that the San Jose scale is more widespread in southern Ontario than at any time since 1917.

Eggs and young mites of the European red mite were greatly reduced by natural control factors this spring in the Annapolis Valley, Nova Scotia. The species is attracting the attention of growers in sections of the Okanagan Valley, British Columbia.

The eye-spotted budmoth appears to have decreased in many orchards in the Annapolis Valley.

The oblique-banded leaf roller is increasing again in the Victoria district British Columbia, after being at a low ebb for several years.

The European apple sucker threatens to be more abundant than during the past few years in some Nova Scotia orchards.

The spring brood of moths of the oriental fruit moth commenced emerging about 1 week later than in 1934, in the Niagara district, Ontario.

Tent caterpillars have been reported prevalent in many sections of Eastern Canada, and in British Columbia.

The outbreak of the satin moth in the area between Seton lake and the town of Lillooet, in British Columbia, appears to have been definitely checked by the introduced parasite Apanteles solitarius Ratz.

Increased intensity of the outbreak of the larch case bearer, which has been general in Eastern Canada for several years, is reported from New Brunswick and Ontario.

Troublesome infestations of the elk or winter tick on moose, deer, cattle, and horses have been reported in sections of the Maritime Provinces, Saskatchewan, and Alberta.

## GENERAL FEEDERS

## GRASSHOPPERS (Acrididae)

United States. P. N. Annand (June 19): The hatching of grasshopper eggs in the severely infested northern Great Plains States has been greatly retarded by unfavorable weather but has resulted in little or no mortality. Hatching is now in progress in these States and is nearly completed in Michigan and Wisconsin, where the use of poisoned bait will be started within a few days. Some rather heavy reduction in infestation has occurred in the Dakotas as a result of the attack of beefly larvae, which are predacious on the eggs. The infestation in general is not nearly so serious as last year and is limited to the areas not completely baited last year or where infestation was increased by migration from outside areas. Extensive control operations have been under way in California for some weeks, the most serious outbreaks in the State being limited to Imperial and San Diego Counties in the south and to Siskiyou County in the north.

Maine. H. B. Peirson (June 12): Severe injury to 20 acres of corn and hay at East Baldwin, in Cumberland County, reported.

Vermont. H. L. Bailey (June 24): Grasshoppers, chiefly Melanoplus mexicanus Sauss., reported as abundant in the Connecticut River Valley in Windham County. Very few found on investigation in Connecticut Valley district of Orange County, where grasshoppers have been extremely abundant in previous outbreaks.

Georgia. O. I. Snapp (June 7): Grasshoppers, principally M. femur-rubrum DeG., caused considerable damage to a peach crop at Thomaston early in June.

Wisconsin. E. L. Chambers (June 20): A survey made during the past week showed that the M. mexicanus that hatched 3 weeks ago were pretty well thinned out by cold, wet weather, but Camnula pellucida Scudd. was present everywhere in the light sandy areas and pastures, and averaged as many as 150 hoppers per square yard. Most of them were a few days old, and 90 percent of the eggs had hatched by June 12.

Minnesota. A. G. Ruggles (June 21): Grasshoppers are just beginning to hatch. They are moderately abundant.

North Dakota. J. A. Munro (June 23): The hatch of grasshoppers is about 5 to 6 weeks later in the season than for 1934. On a State-wide trip, which I have just made, I observed that most of the hoppers now hatched are in the first and second instars and are remaining in their hatching areas because of the luxuriant growth of grasses. Poisoning operations are under way in areas requiring attention.

F. D. Butcher (June 18): In Pembina and Walsh Counties from 20 to 70 percent of C. pellucida have hatched; higher percentages of M. bivittatus Say, some of which are now in second instar; and a few M. mexicanus are in second instar.

South Dakota. H. C. Severin (June 20): The spring was cold and wet over most of the State and only three reports of grasshopper damage have been received. Eggs are still hatching.

Iowa. C. J. Drake (June 24): Grasshoppers have been hatching in considerable numbers in western Iowa this spring. In comparison with former years the hatches are rather late. The nymphs of the two-lined grasshopper are largely in the third and fourth instars. The infestation is quite spotted, and many farmers are using commercially prepared poisoned-bran mash.

Kansas. E. T. Jones (June 29): In most of the fields grasshoppers were comparatively rare. One field in Lyon County proved to be an exception. In this field 155 M. bivittatus nymphs in about the third instar and 2 M. femur-rubrum adults were taken in 50 sweeps. Less than 5 grasshoppers were taken in any other field swept.

Colorado. G. M. List (June 22): Grasshoppers have hatched in moderate numbers in a number of counties. Poisoning will be necessary in limited localities but present indications are that there will be no large areas involved.

Texas. F. L. Thomas (May): The county agent reports that grasshoppers are more abundant in the lowlands in the southern part of Dallas County than they have been during the last 5 or 6 years.

Utah. G. F. Knowlton (June 17): Grasshoppers are, in general, less damaging this spring than usual.

C. J. Sorenson (June 19): C. pellucida is very abundant near Annabella, in Sevier County.

Oregon. W. R. Walton (June 12): C. pellucida began hatching in northern part of Klamath County on May 20 or 21. Most of the eggs had hatched and the hoppers were just beginning to feed on grasses on May 22. Hatching was a month later than in 1934.

#### MORMON CRICKET (Anabrus simplex Hald.)

Colorado. G. M. List (June 22): The Mormon cricket is quite numerous in the Blue Mountain area in western Moffat County. Several large bands have begun to move toward the cultivated areas. Control will be necessary to protect some of the crops.

Idaho. C. Wakeland (June 22): The first adults of the Mormon cricket were observed on June 12. In the warmer, lower areas of the State most of



them are now in the adult stage and mating has begun. The infestation is much more extensive this year than at any time during the present outbreak. We know there are crickets in 20 counties in southern and central Idaho. Crickets are showing a different tendency in migration this year. They are working down more to the desert areas. Some very large groups have left the foothills and have migrated miles into the open desert, where there is no green food or moisture.

Oregon. D. C. Mote (June): Mormon cricket found at Pendleton, Umatilla County.

#### CUTWORMS (Noctuidae)

Vermont. H. L. Bailey (June 24): Cutworms of several species continued unusually abundant and caused much damage.

Ohio. T. H. Parks (June 25): Cutworms became troublesome the last week in May and continued to devour early garden crops during the first 10 days of June. The principal species involved fed on the foliage at night, instead of cutting off the stems.

B. J. Landis (June 24): On June 17 the first moths emerged from pupae at Columbus. Cutworms continued to be injurious during the first 2 weeks of June.

E. W. Mendenhall (June 12): The climbing cutworms Rhynchagrotis alternata Grote are very serious on garden crops in central Ohio this spring, causing a good deal of destruction to tomatoes, cabbage, and potatoes.

Indiana. J. J. Davis (June 25): Climbing cutworms were reported to be damaging apple buds at Notre Dame on June 4.

Michigan. R. Hutson (June 11): Cutworms have been reported from all over the State in unusual numbers. (June 19): Trouble from all kinds of cutworms is continuing.

Wisconsin. E. L. Chambers (June 20): Severe outbreaks of cutworms occurred on light sandy fields plowed this spring and planted to corn, tomatoes, and small grains. Many large fields of corn and oats were almost completely destroyed and corn had to be replanted in many counties in the south and central parts of the State. County-wide control campaigns were conducted in eight counties.

C. L. Fluke (June 22): Severe damage by cutworms to tobacco and sugar beets in Dane County. In 92 hills of tobacco in one field an average of 7 cutworms per hill was found.

Minnesota. A. G. Ruggles (June 21): Feltia ducens Walk. and a species of Euxoa have been on a rampage all over the State. Fields of corn have been destroyed and flax, onions, soybeans, and hawthorn raspberry have

been badly attacked. The ordinary garden cutworm has also been fairly abundant.

A. A. Granovsky (June 21): Many crops, especially the truck crops and the flower gardens, suffered from several species of cutworms. Agrotis c-nigrum L. and Lycophotia margaritosa saucia Hbn. are the species most commonly found associated with this damage.

North Dakota. J. A. Munro (June 18): Cutworms are reported damaging barley in Sheridan County. Cornfields in southeastern counties are being attacked so severely that some replanting is necessary.

South Dakota. H. C. Severin (June 20): Cutworms are still doing an unusual amount of damage generally, attacking gardens, truck crops, and corn.

Iowa. C. J. Drake (June 24): Cutworms are unusually abundant this spring. Considerable numbers may still be found in gardens and cultivated fields. The variegated cutworm (L. margaritosa saucia) is doing considerable damage in alfalfa and clover fields.

Missouri. L. Haseman (June 26): A considerable infestation of the yellow-striped cutworm (Prodenia ornithogalli Guen.) took place early in the month.

Oklahoma. F. A. Fenton (June 24): An outbreak of the variegated cutworm developed in alfalfa fields in the extreme northeastern corner of the State. The two-lined cutworm (P. ornithogalli) is present in about normal numbers and is causing extensive damage to stands of cotton, corn, and melons. It also feeds on beans.

Utah. C. J. Sorenson (June 19): Pale western cutworms (Porosagrotis orthogonia Morr.) are moderately abundant in dry-land wheat in Cedar Valley, in Utah County, and on Levan Ridge, in Juab County.

S. R. Boswell (June 11): During the last 2 days cutworms have completely cleaned up the cornfields around Joseph and Elsinore. These worms are of the type that works under ground and farmers did not know of their existence until entire patches of corn were gone.

California. H. J. Ryan (June 24): During the week ended May 18 the variegated cutworm was noted damaging citrus, alfalfa, and tomatoes in different parts of Los Angeles County.

#### ARMYWORM (Cirphis unipuncta Haw.)

Maine. H. B. Peirson (June 22): Several moths were noticed at Bar Harbor on May 11 and 13.

Maryland. E. N. Cory (June 22): An outbreak is occurring in Baltimore County. Adults were found flying in the vicinity of College Park on

June 9 and 10, and one larva was collected at College Park on the latter date.

Virginia. W. J. Schoene (June 20): Armyworms were found on June 9 in Wythe County, where they were causing serious injury to newly planted corn and small grains.

Ohio. T. H. Parks (June 24): An armyworm outbreak was reported from Butler County on June 18. This report was followed closely by reports from Madison and Marion Counties. Yesterday the insect was reported to be injuring corn in Franklin and Mahoning Counties. The path of the outbreak extends from southwest to northeast across the State. Many larvae bear parasite eggs.

Indiana. J. J. Davis (June 25): Numerous armyworm outbreaks have been reported from all sections of the State. The first report came from Cannelton, in the extreme southern part of the State and others have been received from all sections to the extreme northern part. In most instances wheat heads are being attacked, although in some fields the worms have gotten into the corn and are damaging it. All specimens that have been sent to us bear numerous tachinid eggs.

Illinois. W. P. Flint (June 21): Heavy flights of moths during May have resulted in moderate to severe outbreaks throughout the State.

Kentucky. W. A. Price (June 22): Scattered armyworm outbreaks occurred in central and western Kentucky. Little damage was done and practically all worms had disappeared by June 16.

Iowa. C. J. Drake (June 17): Armyworm outbreaks started on June 14 in Fremont and Mills Counties. The county agent of Fremont County reports that there are armyworms in every township. The county agent of Mills County stated that over 600 acres of rye and wheat near Glenwood and Malvern were infested. (June 24): Southern Iowa is rather heavily infested with armyworms.

Missouri. L. Haseman (June 26): The regular midsummer brood of armyworms has swept most of the State. This week they are maturing in the southern half of the State but complaints regarding them are still coming in from the more northern districts.

Kansas. H. R. Bryson (June 25): True armyworms have been quite abundant and have done some damage.

Oklahoma. F. A. Fenton (June 24): An outbreak of the armyworm occurred in wheat in the extreme northeastern corner of the State. Considerable damage was done to wheat and barley in many fields, especially those on bottom lands. This outbreak was first noted on May 13 and apparently most of the worms disappeared early in June.



ALFALFA LOOPER (Autographa californica Speyer)

Colorado. G. M. List (June 22): There is a very general and rather heavy outbreak throughout the southern and western parts of the State. In some areas truck crops, especially head lettuce, are being severely injured. Peas and sweetclover seem to be favorite hosts. In some of the orchard sections the loopers are migrating from these crops to fruit trees.

Oregon. D. C. Mote (June): Caterpillars are very abundant and are damaging seedling alfalfa, Austrian peas, beans, squash, corn and other crops in the Willamette Valley.

L. P. Rockwood (June 18): A general outbreak, particularly in red clover, is in progress in Washington County. The northern part of the county is most seriously affected. As the hay crop is taken off the worms eat down the small amount of green residue and second growth. The most serious damage is to adjacent corn and lima beans, to which the worms migrate after the hay is removed. One field of seed onions adjacent to hay was being seriously damaged. The worms preferred the onion leaves but, as there were few of these, they were feeding on the seed stalks, weakening them and causing loss of seed heads. Grass and grains, including wild oats, are not attacked. There was considerable feeding on the late green pods of common hairy vetch in one field, but smooth vetch in the same field was apparently not damaged.

SALT-MARSH CATERPILLAR (Estigmene acraea Drury)

Oklahoma. F. A. Fenton (June 24): Three species of woolly worms have been unusually numerous this past spring--Isia isabella S. & A., Diacrisia virginica Fab., and Estigmene acraea Drury. These caterpillars caused severe injury to cotton seedlings and to corn and melon crops, destroying stands. They fed on ripening peaches and tomato fruits, but not on tomato foliage. Legumes, beans in particular, were being injured by the worms eating the blooms and pods. The salt-marsh caterpillar was unusually abundant on sweetclover. This species comprised about 90 percent of the population and at present it is being wiped out by some disease.

Texas. H. J. Reinhard (June 22): Full-grown larvae of the salt-marsh caterpillar are common in cornfields, where they are feeding on silks. This insect has also been noted as seriously damaging chrysanthemum plants.

WHITE GRUBS (Phyllophaga sp.)

Maine. H. B. Peirson (June 22): The first flight of May beetles at Bar Harbor occurred on May 27, following two warm days.

New Hampshire. L. C. Glover (June 8): June beetles are beginning to be more numerous now, although the first flight was reported on May 29.



- Maryland. E. N. Cory (June 22): May beetles have been doing considerable damage in various localities in the State. They stripped many pin oaks in Montgomery and Frederick Counties and nearly stripped one very large white oak in Montgomery County. They have been reported as feeding heavily on cherry, elm, and oak.
- Kentucky. W. A. Price (June 22): May beetles have been difficult to obtain this season. Excessive rainfall and low temperatures in the evening have made flights irregular and light.
- Michigan. R. Hutson (June 11): Various species are emerging in numbers throughout the Lower Peninsula.
- Wisconsin. E. L. Chambers (June 20): Serious losses from white grubs have been observed at several of our larger nurseries in northern Wisconsin to evergreen seedlings that had not been treated. Reports of injury to corn and garden crops have also been received from Fond du Lac, Waushara, Vernon, and La Crosse Counties.
- C. L. Fluke (June 22): The predominating species are P. hirticula Knoch, P. fusca Froel., P. rugosa Melsh., and P. tristis Fab. Others less numerous are P. ilicis Knoch, P. implicita Horn, and P. balia Say. Flights have been steady since May 23, except for a cold rainy period from June 14 to 20. Most species are now laying eggs. Bur oak trees are stripped throughout southwestern Wisconsin.
- Minnesota. A. A. Granovsky (June 21): Damage from white grubs is not noticeable, although brood C grubs are common. The June beetle flight was heavy, especially in the southeastern section of the State, where many wood groves are badly defoliated. P. fusca, P. rugosa, P. implicita, P. futilis Lec., P. drakei Kby., and P. anxia Lec. are fairly common, although not over the entire area.
- North Dakota. J. A. Munro (June 18): White grubs at Selfridge and Fargo. Adults began flying at Fargo on June 2.
- Iowa. C. J. Drake (June 24): Adults are still emerging and defoliating trees. Over 15 species have been collected.
- Kansas. H. R. Bryson (June 27): May beetles reported defoliating Chinese elm at Herington.
- Oklahoma. F. A. Fenton (June 24): The peak catch at the trap light was from May 7 to 12, inclusive, when 1,750 specimens were taken. The maximum catch was 646 on May 12. Populations for June are very small so far, a maximum of 78 being taken on the 8th.

#### JAPANESE BEETLE (Popillia japonica Newm.)

- New Jersey. C. H. Hadley (June 27): Owing to cool weather in the spring, the immature forms of the Japanese beetle have been retarded in their

development and the emergence of adults is later than normal. The first beetle in the vicinity of the Moorestown laboratory was found on June 17, a week later than in 1934. They have been coming out slowly since then and are now present in small numbers. In the older infested area a high percentage of diseased larvae have been found in the soil, but this disease has not yet been found in several newly infested areas where soil surveys have been made.

Delaware. L. A. Stearns (June 17): First adult observed at Wilmington.

#### ROSE CHAFER (Macrodactylus subspinosus Fab.)

New York. N. Y. State Coll. Agr. News Letter (June): Rose chafers were being reported in injurious numbers in orchards in the Hudson River Valley and in the Great Lakes district the last week of the month.

New Jersey. C. H. Hadley (June 20): The rose chafer was first observed June 10 on roses at Moorestown and is now common.

Delaware. L. A. Stearns (June 5): First adults observed on June 5 at Newark.

Maryland. E. W. Cory (June 22): A decided pest in Anne Arundel, Baltimore, and Dorchester Counties. It is feeding on trees and flowers.

North Carolina. C. H. Brannon (June 15): This insect is present in large numbers over the State and is causing serious damage in apple orchards in several mountain counties.

Michigan. R. Hutson (June 25): Rose chafers are causing considerable annoyance in the vicinities of Shelby and of Tobinabee.

#### WIREWORMS (Elateridae)

Minnesota. A. G. Ruggles (June 21): Wireworms are moderately abundant in peat soil particularly.

A. A. Granovsky (June 21): This is a year of heavy wireworm damage. Corn, onions, and nursery plantings suffered in many sections of the State, especially where crops were growing on peat soil.

North Dakota. J. A. Munro (June 18): Wireworms are damaging wheat and corn at Mott, Hanks, Hazen, and Baker. In some instances whole fields have been destroyed.

South Dakota. H. C. Severin (June 20): More than the usual damage by wireworms has been done to corn and wheat this spring.

Nebraska. M. H. Swenk (June 14): Injury to planted corn seeds and corn roots by Melanotus sp. was reported from Cherry County the second week in June.

Kansas. H. R. Bryson (June 27): Melanotus sp. was reported to be injuring potatoes and tomato plants in a garden at Peru on June 18.

Wyoming. C. L. Corkins (June 10): Wireworms are destroying bean seedlings in many fields in Big Horn County and wheat in Park County.

## CEREAL AND FORAGE - CROP INSECTS

### WHEAT AND OTHER SMALL GRAINS

#### CHINCH BUG (Blissus leucopterus Say)

United States. P. N. Annand (June 19): Weather during the past few weeks has further reduced the chinch bug infestation over the Corn Belt States. Although bugs still occur in threatening numbers in some places, the infestation has been so reduced by rain that it is general only in limited areas, and in some States, including Kansas, Nebraska, and Wisconsin, the infestation had been reduced to the point where very little damage is expected. In Ohio and Indiana, however, the infestation is still threatening, and latest reports from Missouri indicate that fairly high populations still occur in that State and it is expected that some bugs will migrate to corn. Infestation in Illinois has been so reduced that, with a continuation of present weather conditions, only relatively minor damage to corn is expected. Damage to small grains has not been general, although in some areas, particularly in Iowa, isolated fields of barley show rather severe damage.

North Carolina. C. H. Brannon (June 22): The chinch bug is seriously damaging several fields of corn in Anson, Chatham, and Pitt Counties.

South Carolina. F. Sherman and W. C. Nettles (June 21): A number of outbreaks have been reported in the northeastern third of the State, in corn adjacent to small grains.

Ohio. T. H. Parks (June 25): The daily rains between June 15 and 24 helped greatly to control the chinch bugs. Apparently there is not much of a problem ahead for central and western Ohio counties, where the eggs have not yet hatched and the wheat will be cut in 10 days. Around Wooster and elsewhere in northeastern Ohio, the situation still remains serious. Wheat harvest is from 2 to 3 weeks away and many eggs are ready to hatch. Two weeks of dry weather will probably bring on an outbreak.

Indiana. J. J. Davis (June 25): The anticipated outbreak of chinch bugs has not materialized. During the week beginning June 16 heavy rains were prevalent throughout the State, materially aiding the development of fungus and also destroying many of the young bugs. There are still plenty of old bugs in small-grain fields, particularly in the central and eastern parts of the State.



Illinois. W. P. Flint (June 21): Chinch bugs were reduced to light or moderate numbers throughout the infested area. No damage to small grain is anticipated in the southern third of the State. From light to moderate damage in the northwest fourth of the State is possible. Old bugs in all areas are leaving small grain and flying to corn, and some are ovipositing in corn.

Wisconsin. E. L. Chambers (June 20): Continuous cold heavy rains have apparently held the chinch bugs in check everywhere. No young bugs have hatched. All indications point to very little damage to small grains and almost a week of rain and cloudy weather to date may also eliminate any great danger to corn.

Minnesota. A. G. Ruggles (June 21): Chinch bug adults are fairly well distributed but no nymphs have been found.

Iowa. C. J. Drake (June 24): The chinch bug infestation is quite spotted and is heaviest in the western part of the State. Throughout the central and southern parts of Iowa winter mortality was very high, in some counties running over 90 percent. In Henry, Jefferson, and Washington Counties the white fungus disease killed many bugs. The spring has been too cold for the adults to lay the normal number of eggs. In some fields the infestation still runs as high as 50 adults per linear foot of drill row of small grain. The heavy growth of foxtail and other summer grasses will probably be sufficient to hold the nymphs in many fields until they attain the imago stage.

Missouri. L. Haseman (June 26): With the continued rainfall the chinch bug has not been able to develop normally; in fact, with each succeeding rain it has been losing ground in the State. At the present time there is one center of slightly heavier infestation in north-central Missouri, a second in the northwestern part, and a third in the west-central part, but in none of these areas is the situation particularly alarming.

Kansas. H. R. Bryson (June 27): Chinch bugs are scarcer in Kansas than they have been at harvest time for several years. Very few old or young bugs can be found. Some eggs are present.

Oklahoma. C. F. Stiles (June 21): The chinch bug situation is greatly improved. The infestation ranges from a trace in some counties to an average of three per linear foot of drill row. Heavy rains have fallen through the northeastern grain belt of the State during the past 48 hours and I doubt that there will be any migration.

#### HESSIAN FLY (Phytophaga destructor Say)

Ohio. T. H. Parks (June 25): Hessian fly is quite abundant in the wheat crop almost ready to be harvested. Abundance of rains late in May and the first 3 weeks of June have brought this pest to the front very rapidly. The situation was quite satisfactory last fall, with very little infestation. Now the insect is very abundant and there are many



broken stems in some wheat fields. Our annual wheat-insect survey will start in southern Ohio this week.

Indiana. J. J. Davis (June 25): An unprecedented outbreak of the spring brood of the hessian fly has covered the State of Indiana, and is probably most severe in the central part of the State. In some localities wheat has been killed outright, as in Boone County, where perhaps one-third of the wheat fields have been destroyed. Many other fields are beginning to show damage from lodging. The heavy spring infestation is owing in a few instances to early sown wheat, but in general to the large amount of volunteer wheat that developed in waste land and elsewhere last fall.

Illinois. W. P. Flint (June 21): The spring brood of the hessian fly has been unusually heavy, resulting in from light to moderate damage in the wheat areas of the State.

Missouri. L. Haseman (June 26): There has been a rather definite pick-up in the abundance of hessian fly. It is attributed to the favorable weather of the past fall and to the large acreage of wheat seeded early for pasture. The pest is more abundant in the southern half of the State.

Kansas. H. R. Bryson (June 27): Observations made in southeastern Kansas by R. H. Painter indicate that the hessian fly is very abundant in the vicinity of Parsons.

#### BLACK GRAIN-STEM SAWFLY (Trachelus tabidus Fab.)

Pennsylvania. E. J. Udine (June 13): Adults have been flying in abundance the last few days throughout most of western and south-central Pennsylvania. Adults are still flying in abundance in fields near Red Lion, in York County, but are becoming scarce in western Franklin County where larvae are already in the first instar.

Virginia. J. S. Pinckney (June 20): Hibernating larvae of the black grain-stem sawfly were found in wheat stubble in Campbell County. About 2-percent infestation was noted in the fields examined.

Ohio. J. S. Houser (June 8): On June 4 adults were abundant in wheat and rye in Mahoning County. Oviposition in wheat was observed near North Lima on June 8. Eighty-seven adults were captured in a field of wheat near Ellsworth by making one hundred sweeps of a sweep net 15 inches in diameter. Losses in this area will probably be heavy this year.

#### A WHEAT-STEM SAWFLY (Cephus pygmaeus L.)

Pennsylvania. C. C. Hill and E. J. Udine (June 12-13): Adults are flying abundantly in wheat fields near Williamsport, in Lycoming County, and at Red Lion, in York County.

CORNEUROPEAN CORN BORER (Pyrausta nubilalis Hbn.)

General. A. M. Vance (June): Past winter conditions have been generally favorable to the hibernating corn borer and the natural mortality appears to be about normal. The spring development in Accomac and Northampton Counties, Va., was more advanced than in any other section of the United States where the insect is known to occur. It appears certain that at least two generations of the borer can be expected annually on the Eastern Shore. Early Irish potatoes, which are grown extensively in this region, may serve as an important host plant for the first-generation borer before the main corn crop, which is planted between rows of potatoes after their first cultivation, becomes available for borer infestation.

Vermont. H. L. Bailey (June 24): In western Vermont the first pupae were found in the field on June 9 and the first adult on June 23.

Connecticut. H. Turner (June 24): The European corn borer was very late in emerging. Eggs are still found in the field and larval injury is just appearing on corn. Injury is apparently as severe as in 1934.

LESSER CORN STALK BORER (Elasmopalpus lignosellus Zell.)

South Carolina. W. C. Nettles (June 21): The lesser corn stalk borer is prevalent over the State, attacking beans.

Florida. J. R. Watson (June 20): Many complaints were received of the depredations of the lesser corn stalk borer, and some concerning those of the larger corn stalk borer (Diatraea crambidoides Grote), but the infestation was not nearly so severe as 2 years ago.

Mississippi. C. Lyle (June 22): Inspector G. L. Bond reported a severe infestation of the lesser corn stalk borer in George and Jackson Counties, one farmer estimating a loss of more than 200 bushels of corn. Eighty-five percent of a field of peas had been killed and sugarcane had also been damaged severely. A farmer in George County had hauled out two wagon loads of corn that had broken off at the ground. No complaints have been received from other sections of Mississippi.

SOD WEBWORMS (Crambus spp.)

Indiana. J. J. Davis (June 25): A sod webworm, Crambus sp., was reported as destructive to corn in central Indiana and as far north as La Porte County. The inquiries concerning it were received during the last 2 weeks in June.

Michigan. R. Hutson (June 19): C. caliginosellus Clem., the corn root webworm, was found injuring corn at Mason on June 18.

SUGARCANE BEETLE (Eustheola rugiceps Lec.)

North Carolina. C. H. Brannon (June 13): The rough-headed corn stalk beetle is causing rather serious damage to corn in Currituck County.

Georgia. T. L. Bissell (June 5): An upland field of 5 acres of corn at Experiment has been damaged 75 percent. Beetles have apparently left the field but have just begun to injure nearby bottom-land corn that is 2 weeks old.

Tennessee. G. M. Bentley (June 11): Adult beetles are doing serious damage in several cornfields in the central part of Tennessee.

Alabama. J. M. Robinson (June 20): Reported as damaging young corn about knee high at Ranburne, in Cleburne County.

SOUTHERN CORN ROOT WORM (Diabrotica duodecimpunctata Fab.)

Kentucky. W. A. Price (June 22): The southern corn root worm has extensively damaged corn in sections of central and western Kentucky.

North Carolina. C. H. Brannon (June 20): Root worm damage to young corn is very prevalent in eastern North Carolina. Several fields in the mountains in Macon County are also badly damaged.

A CORN SILK BEETLE (Luperodes varicornis Lec.)

Mississippi. C. Lyle (June 22): Considerable damage to ears of corn by the corn silk beetle was reported by inspector N. D. Peets of Bogue Chitto on June 18 and by a correspondent at Waynesboro on the same date.

CORN BILLBUGS (Calondra spp.)

Iowa. C. J. Drake (June 24): Several species of corn billbugs have damaged a few fields of corn in Monona, Harrison, and Fremont Counties. The clay-colored billbug (C. aequalis Gyll.) is doing some damage in wheat fields in Fremont County. The adults were feeding on the kernels of grain and in one large field about  $1\frac{1}{2}$  rods of wheat along one side (80 rods long) had been almost totally destroyed. In an adjoining cornfield this and another species of billbug were injuring corn.

CORN BLOTCH LEAF MINER (Agromyza parvicornis Loew)

North Carolina. R. W. Leiby (June 19): Fields of corn have been completely ruined in parts of Hyde, Tyrrell, and Beaufort Counties by the corn blotch leaf miner. Many fields have been plowed up and planted in soybeans. The last serious outbreak in this part of the State was in 1919.



ALFALFAALFALFA WEEVIL (Hypera postica Gyll.)

Colorado. G. M. List (June 22): Alfalfa weevil injury is the most serious ever observed. The population is higher in all of the areas than for several years. In Mesa County, in the area from Palisade to Mack, involving the entire Grand Junction region, the first crop will not be more than from one-third to one-half of normal. Scouting shows some new area involved.

Idaho. C. Wakeland (June 22): I obtained 1,440 larvae of the alfalfa weevil in one hundred sweeps of the net on June 13 in Council, Adams County. For the first time in 10 years, moderate injury is easily noticeable in many of the fields in that locality.

R. W. Haegle (June 19): The infestation in southwestern Idaho is general, with considerable damage to numerous fields, especially in Canyon, Washington, and Adams Counties. This is the first injury of consequence in Canyon County in over 10 years.

Utah. C. J. Sorenson (June 19): The alfalfa weevil is from moderately abundant to very abundant in Sevier County and elsewhere in Utah.

California. A. E. Michelbacher (June 21): The larvae of the alfalfa weevil are rather scarce throughout its entire range in middle California. They are least abundant in the hot, dry San Joaquin Valley. In the cooler areas the highest number collected per one hundred sweeps of an insect net on June 20 ranged from 30 to 40. In both the Pleasanton and the San Francisco Bay areas parasitization by Bathyplectes curculionis Thoms. continues high. Based on examinations of from medium to large alfalfa weevil larvae, the parasitization ranges from 80 to nearly 100 percent.

CLOVERCLOVER LEAF WEEVIL (Hypera punctata Fab.)

Indiana. J. J. Davis (June 25): The clover leaf weevil was reported as destructive to sweetclover at South Whitley on May 29.

Iowa. C. J. Drake (June 24): The clover leaf weevil was found in considerable numbers in alfalfa fields in Montgomery County.

Nebraska. M. H. Swenk (June 14): The clover leaf weevil was reported to be infesting alfalfa fields in Richardson County on May 29.

A SCARABAEID (Phobetus comatus Lec.)

Oregon. D. C. Mote (June): Larvae are doing considerable damage to alfalfa at Hermiston.



VETCHVETCH BRUCHID (Bruchus brachialis Fahraeus)

Pennsylvania. C. C. Hill and E. J. Udine (June 19): Adults and eggs were found on hairy vetch near Waynesboro.

Maryland. C. C. Hill and E. J. Udine (June 19): Adults and eggs were found to be numerous on vetch near Hagerstown.

North Carolina and South Carolina. J. S. Pinckney (June 22): Seed pods of hairy vetch in the vicinity of Salisbury are heavily infested. Larvae within the seed are in all stages of development up to the fourth instar. The hairy vetch bruchid has been found in the following counties: Cabarrus, Catawba, Davidson, Davie, Forsyth, Gaston, Guilford, Iredell, Lincoln, Mecklenburg, Randolph, Rowan, Stanly, Union, and Yadkin, in North Carolina, and in Chesterfield and Lancaster Counties in South Carolina.

## F R U I T I N S E C T S

APPLECODLING MOTH (Carpocapsa pomonella L.)

New York. N. Y. State Coll. Agr. News Letter (June): Owing to unfavorable weather very little damage has been done by the codling moth this month.

Delaware. L. A. Stearns (June 19): Twenty percent mortality of overwintered larvae; emergence of the spring brood completed June 13; first first-brood larvae hatched on May 30; peak of moth activity as indicated by bait pans on May 29; first injury observed in apple orchard on June 6; injury to date much lighter than usual.

Maryland. E. H. Cory (June 22): Codling moth emergence has been retarded by cool weather. There is a strong probability that a large second brood may occur.

Georgia. C. H. Alden (June 20): Codling moth scarce, lowest infestation in a number of years, but beginning to increase.

Ohio. T. H. Parks (June 25): Emergence of moths at Columbus was heavy between May 30 and June 5 and again between June 9 and 15. Bait-pan catches started up again yesterday. The first larval entrances were seen in Lawrence County on June 6, in Miami County on June 12, and at Columbus on June 13. First-brood larvae are much less abundant than last year and many nights during the past 3 weeks have been rainy and unfavorable for egg laying. Moths are still emerging from overwintering cocoons but only a few emerge each day. It is quite apparent that the codling moth will not be the problem it has been during the past 5 years.

- Indiana. D. W. Hamilton (June 21): At Orleans, peak flights of spring-brood adults occurred in light and bait traps during the nights of May 13, 21, and 27. Since May 27 daily trap captures have gradually tapered off. Weather conditions have been unfavorable for moth activity all season. First-brood larval entrances and stings are much scarcer than at this time last season.
- Illinois. W. P. Flint (June 21): First-brood codling moth emergence was delayed until June 10 to 15. Our check trees in experimental plots in southern Illinois on June 5 showed only 0.3 percent of larval entrances, as compared to 45 percent in the same location on the same date last year.
- Michigan. R. Hutson (June 11): The first adult emerged in the field at Lansing on June 6. Pupation throughout the fruit belt is very uneven. Some locations show more than 50 percent pupation on June 5, while others within a few miles show only from 10 to 20 percent.
- Minnesota. A. G. Ruggles (June 21): First codling moth adult seen on June 9.
- Missouri. L. Haseman (June 26): Emergence of spring-brood moths has been very erratic, beginning on about normal time in the southern half of the State and from 3 to 4 weeks late in the northern half. The fruit is the cleanest we have had for many years.
- H. Baker (June 22): At Saint Joseph activity of the moths has been light and larval entrances few, owing partly to continued cool, rainy weather and partly to a greatly reduced population, as compared to that of 1934. The first 1934 entrance was found in the experimental orchard on May 18 and in 1935 on June 12. Bait-trap catches indicate that the peak of spring-brood moth activity occurred from June 8 to 16. The newly hatched larvae appear to be weak, as evidenced by many unsuccessful entrances, even where there is little or no spray coating.
- Arkansas. D. Isely (June 22): The infestation of larvae of the first brood is unusually light in northwestern Arkansas. Probably there is less worm injury for this time of the year than in any year since 1928.
- Oklahoma. F. A. Fenton (June 24): Codling moths from long-cycle larvae have continued to emerge during June, the date of the last emergence being on June 16. Peaks of emergence came on May 8 and June 2. The emergence curve at Tahlequah followed that at Stillwater, but was 10 days later.
- Colorado. G. M. List (June 22): There was a low winter mortality of the larvae. Spring emergence is later than usual but the indications are that the populations are going to be heavy in most of the orchard sections.
- Idaho. R. W. Haegle (June 19): Emergence began on May 4, reaching peak on May 20, with a heavy emergence continuing until June 10.
- Utah. C. J. Sorenson (June 19): The codling moth is moderately abundant throughout the State.

California. H. J. Ryan (June 24): Inspection of walnut groves in the eastern part of Los Angeles County was begun on May 20. Very few eggs were found until about the 25th, when the egg-laying season reached the peak. Spraying was begun in groves where walnuts had reached nearly full size on May 27. Owing to uneven emergence of adults and the uneven size of the nut, control is likely to be difficult. I understand that spraying was begun in Orange and Riverside Counties about a week earlier than here, indicating that emergence in those sections was earlier.

EASTERN TENT CATERPILLAR (Malacosoma americana Fab.)

Maine. H. B. Pairson (June 22): The American tent caterpillar was generally abundant in southern Maine on June 10, nests being very noticeable. In York County they are very numerous.

Massachusetts. E. P. Felt (June 25): Defoliation of cherry trees and neglected orchards is general and almost complete in western Massachusetts.

Connecticut. W. E. Britton (June 24): The caterpillars have now all transformed. One report of large numbers of dead caterpillars suggests bacterial wilt. Stripped trees are now putting out new leaves. Adults are flying.

Delaware. L. A. Stearns (June 19): Infestation slightly less severe than in 1934. Adults now being collected at light traps. (June 20): First egg masses observed at Newark.

New Jersey. T. J. Headlee (June 21): We are just closing the tremendous outbreak of the apple tree tent caterpillar, which occurred practically all over the State and in most extraordinary numbers. The caterpillars this year have shown the presence of much disease and considerable parasitization. In certain parts of the State ground beetles have been very busy in consuming them. We think that the year 1935 was the top year of the cycle and that next year the caterpillars will be materially fewer in numbers.

Pennsylvania. A. B. Champlain (June 17): First adults noted flying on June 15. Some larvae in field have not yet pupated. Defoliation heavy on favorite food plants in mountain regions.

Ohio. J. S. Houser (June): This insect is to be found in many sections of the State this year but is particularly abundant in the northeastern section. The low-growing shrubs of cherry and wild apple in some pasture fields are almost all defoliated. On June 7 the larvae were almost full grown.

GREEN FRUIT WORM (Graptolitha antennata Walk.)

Vermont. H. L. Bailey (June 24): The green maple worm is very abundant on ash and soft maple on the lake shore and swamps in Grand Isle and Chittenden Counties. Defoliation in places.



New York. N. Y. State Coll. Agr. News Letter (June): Green fruit worms were unusually abundant during the early part of the month in the Hudson River Valley and on Long Island. In the western part of the State this insect was about normally abundant.

#### APHIDS (Aphidae)

Connecticut. P. Garman (June 24): Dry period in May probably prevented a serious outbreak of Anuraphis rosae Baker.

New York. N. Y. State Coll. Agr. News Letter (June): Rosy apple aphids were quite numerous in the Hudson River Valley in the early part of the month. By the middle of the month they were leaving the fruit trees. They were also numerous in the western part of the State, doing some damage in orchards where the nicotine was left out of the sprays. Toward the end of the month the green apple aphid (Aphis pomi DeG.) was increasing in numbers in the Hudson River Valley.

New Jersey. T. J. Headlee (June 21): We have a moderate infestation of rosy apple aphids and a beginning infestation of the green apple aphid.

Georgia. C. H. Alden (June 20): Green aphids are very abundant and injurious in the Esom Hill section.

Michigan. R. Hutson (June 19): Rosy apple aphids are becoming moderately abundant in Berrien, Van Buren, and Allegan Counties. The first migrants were observed on June 14.

Utah. G. F. Knowlton (June 17): Rosy apple aphids are damaging apple foliage on Provo Bench and at Hobbie Creek.

C. J. Sorenson (June 19): Green apple aphids are very abundant in Box Elder County.

#### WHITE APPLE LEAFHOPPER (Typhlocyba pomaria McAtee)

Connecticut. P. Garman (June 24): White apple leafhoppers are abundant in some apple orchards in New Haven and New London Counties.

Virginia. W. J. Schoene (June 20): Observations in Roanoke and Frederick Counties indicate that leafhopper adults are very abundant in a few orchards. The white apple leafhopper is most common. Fruit is specked and leaves injured by feeding. Insects more abundant than for several years.

#### APPLE MAGGOT (Rhagoletis pomonella Walsh)

New York. N. Y. State Coll. Agr. News Letter (June): The first apple maggot fly was observed on a Delicious tree in Kingston on June 17.

New Jersey. E. Kostal (June 17): This insect has produced a 100-percent infestation of fruits of some varieties in neglected plantings in Monmouth County. No adult flies could be found on trees on June 16 and 17, the usual date of beginning of emergence.



### APPLE FLEA WEEVIL (Orchestes pallicornis Say)

Indiana. L. F. Steiner (June 16): The apple flea weevil is causing very serious damage in an apple orchard near Buckskin. Adults by the hundreds can be seen by looking up from almost any location under many of the trees. There appears to be a distinct difference in the population density and the amount of foliage injury between cleaned and uncleared parts of the orchard.

### NEW YORK WEEVIL (Ithycerus noveboracensis Forst.)

Michigan. R. Hutson (June 19): The first New York weevil seen in several years was observed at Belding on June 18, where it was fairly plentiful on a planting of young apple trees in recently cleared land.

Wisconsin. E. L. Chambers (May 25): Serious damage resulted to a newly planted orchard of apple and plum trees near Warrens, Monroe County. The light sand area was poorly prepared for planting, there being many oak saplings and sweetfern on the ground that were heavily infested. The beetles destroyed the breaking buds and ate patches of bark on the stems.

### PEACH

#### PLUM CURCULIO (Conotrachelus nemophar Hbst.) 1/

Connecticut. P. Garman (June 24): Damage to apple by the plum-curculio is less than usual in New Haven.

New York. N. Y. State Coll. Agr. News Letter (June): The plum curculio was but moderately abundant throughout the State during the month.

Delaware. L. A. Stearns (June 19): Activity of overwintered adults is now ended at Bridgeville; the peak of issuance of first-brood grubs from drop peaches was from June 10 to 15, about 10 days later than usual.

Georgia. O. I. Snapp (June 20): Although no second-generation eggs have been deposited in the insectary at Fort Valley to date, peaches coming to the packing sheds today contain newly hatched larvae, indicating that deposition of second-generation eggs has started in the orchards. A heavy second brood of larvae with considerable damage to the Elberta peach crop has been predicted. (June 21): Deposition of second-generation eggs began in the insectary today, and in the field several days ago. Hiley, the first free-stone variety, is just beginning to ripen; therefore this variety will be subjected to a second brood of larvae, as will Georgia Belle and Elberta. The Hiley usually escapes a second-brood attack, but the emergence of first-generation adults occurred considerably earlier than usual.

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1/ The following note credited to O. I. Snapp on page 133 of the May 1, 1935, Insect Pest Survey Bulletin--"May 31. First-generation adults started emerging from peach drops during the night, following rain yesterday"--was sent in by T. L. Bissell, of Experiment, Ga.

C. H. Alden (June 20): The first-brood adults of plum curculio have not yet emerged in Cornelia. A few old beetles are still in the orchards.

Ohio. T. H. Parks (June): The plum curculio is very scarce this year.

Michigan. R. Hutson (June 19): Jarring at Hartford and at East Lansing failed to disclose plum curculio on plums until June 8. They usually appear considerably earlier at these places.

Alabama. J. M. Robinson (June 20): The peach curculio is more abundant and earlier than in several years, which indicates a second generation.

#### ORIENTAL FRUIT MOTH (Grapholitha molesta Busck)

Connecticut. P. Garman (June 24): The first generation is unusually light.

New York. N. Y. State Coll. Agr. News Letter (June): From the middle of June to the end of the month damage to twigs by the oriental fruit moth was observed throughout the State. Damage was not severe.

Delaware. L. A. Stearns (June 19): Forty-two percent mortality of overwintered larvae. Unfavorable weather conditions prevailed during emergence period of spring brood. Emergence completed June 1. Twig injury by first-brood larvae somewhat lighter than usual; brood now practically mature.

Pennsylvania. T. L. Guyton (June 20): The oriental fruit moth is not numerous in Franklin, Adams, and Juniata Counties.

Georgia. O. I. Snapp (June 20): This insect continues less abundant on peach than usual at Fort Valley.

C. H. Alden (June 20): The oriental fruit moth has caused very little twig and no fruit injury at Cornelia to date.

Arkansas. D. Isley (June 22): Injury by the oriental fruit moth has been almost totally absent both in northwestern Arkansas and in the orchards on the southern end of Crowley's Ridge in northeastern Arkansas.

Tennessee. G. M. Bentley (June 16): The oriental fruit moth is 50 percent more abundant than last month in all parts of the State.

Mississippi. C. Lyle (June 22): Inspector G. I. Worthington on June 18 reported general damage to peach twigs by the oriental peach moth throughout Washington, Bolivar, and Sunflower Counties. Inspector N. D. Peets reports considerable damage in Lincoln County, and heavy infestations were reported to this office directly by correspondents in Dorsey and Meridian.

#### PEACH BORER (Aegeria exitiosa Say)

Georgia. O. I. Snapp (June 20): Although hundreds of peach trees in commercial orchards in all directions from Fort Valley have been regularly examined

since April 15, only four pupae have been collected to date, which indicates that there is practically no pupation of this insect under orchard conditions in this locality until July.

Colorado. G. M. List (June 22): Pupae of the peach tree borer were found in the Palisade section on June 13. The injury from this insect to both peach and cherry trees has been heavier than during the past two seasons.

#### BLACK PEACH APHID (Anuraphis persicae-niger Smith)

Delaware. L. A. Stearns (May 22): The black peach aphid is abundant on planting of young peaches at Camden.

#### LEAF-FOOTED BUG (Leptoglossus phyllopus L.)

Georgia. O. I. Snapp (June 20): This insect continues abundant at Fort Valley, and has caused many misshaped peaches. Nymphs are abundant.

#### PEAR

##### PEAR PSYLLA (Psyllia pyricola Foerst.)

Connecticut. P. Garman (June 24): The pear psylla is not abnormally abundant on pear in New Haven County.

New York. N. Y. State Coll. Agr. News Letter (June): During the first week in the month eggs for the second brood were being laid in the Hudson River Valley, and about the middle of the month eggs were hatching. In the western part of the State this insect was very numerous. A report from Monroe County indicates that it was more numerous than ever before.

##### PEAR MIDGE (Contarinia pyrivora Riley)

New York. N. Y. State Coll. Agr. News Letter (June): The pear midge seriously damaged the fruit crop in a number of orchards in both the eastern and western parts of the State.

##### ROSE LEAF BEETLE (Nodonota puncticollis Say)

New York. N. Y. State Coll. Agr. News Letter (June): Rose leaf beetles were especially abundant in Dutchess County last week. They made up for their delayed appearance by an unusually vigorous campaign on apples and pears. Where fresh applications of arsenic had not been made, injury was serious. They began feeding heavily on pears on June 17 in Ulster County and have ruined the pears in one orchard.

##### A FLOWER THRIPS (Frankliniella tritici californica Moulton)

California. H. J. Ryan (June 17): Thrips, principally this species, have been causing some damage to pears in the Antelope Valley, and some control treatments have been applied.



CHERRYCHERRY FRUIT FLIES (Rhagoletis spp.)

New York. N. Y. State Coll. Agr. News Letter (June ): Cherry fruit flies, R. fausta O. S. and R. cingulata Loew, began to emerge during the first week in June in the Hudson River Valley.

Michigan. R. Hutson (June): The dark-bodied cherry fruit fly (R. fausta) emerged at Gobles on June 7, at Grand Rapids on June 11, at Shelby on the 15th, at Beulah on the 16th, at Northport on the 18th, and at Traverse City on the 26th. The light-banded cherry fruit fly (R. cingulata) appeared at St. Joseph on June 17.

BLACK CHERRY APHID (Myzus cerasi Fab.)

New Jersey. T. J. Headlee (June 21): We have a considerable infestation of black cherry aphids.

Maryland. E. N. Cory (June 22): Black cherry aphids are feeding on sweet cherry generally throughout the State. They are quite prevalent.

CHERRY LEAF BEETLE (Galerucella cavicollis Lec.)

Michigan. R. Hutson (June 25): The wild cherry leaf beetle is very prevalent in the vicinity of Topinabee. This is one of the first outbreaks of this insect noted since 1915. The last time this insect was prevalent prior to 1915 was in 1900.

GRAPEGRAPE LEAFHOPPER (Erythroneura comes Say)

New York. N. Y. State Coll. Agr. News Letter (June): Grape leafhopper adults are numerous enough in some vineyards in Dutchess County to produce a troublesome crop of nymphs later on.

Delaware. L. A. Stearns (June 20): The first first-brood nymphs appeared in Camden between June 13 and 20; less abundant than usual. First activity of overwintered adults observed in vineyards on May 21. The infestation will probably be much lighter than usual.

Michigan. R. Hutson (June 19): Adults of grape leafhopper are very abundant on grapes about Decatur, where as many as 25 or 30 are commonly found on the under sides of young grape leaves.

Arizona. C. D. Lebert (June 24): The grape leafhopper observed on grapevines. Some foliage injury.



Utah. G. F. Knowlton (June 17): Grape leafhoppers were damaging grapes at Hurricane and North Farmington. Nymphs are becoming adult in southern Utah.

California. H. J. Ryan (June 17): The grape leafhopper has started to show up on some grape plantings in Los Angeles County and it is possible that a little control work will be done. It is too early to tell whether the infestations will be as heavy as last year.

GRAPE BERRY MOTH (Polychrosis viteana Clem.)

Delaware. L. A. Stearns (June 1): First emergence of spring-brood moths on May 30; no first-brood injury observed.

CURRENT

CURRENT APHID (Myzus ribis L.)

Wisconsin. E. L. Chambers (June 20): Currant and gooseberry bushes throughout the State infested with aphids this summer.

FOUR-LINED PLANT BUG (Poecilocapsus lineatus Fab.)

New York. N. Y. State Coll. Agr. News Letter (June): Four-lined plant bugs are serious in a few currant patches in Ulster and Dutchess Counties.

SAY'S STINK BUG (Chlorochroa sayi Stahl)

Utah. G. F. Knowlton (June 17): Say's plant bugs were present in injurious abundance on black currants at Virgin.

CURRENT STEM GIRDLER (Janus integer Nort.)

New York. N. Y. State Coll. Agr. News Letter (June 17): Currant stem girdlers are serious in a few currant patches in Dutchess County.

Maryland. E. N. Cory (June 12): The willow shoot sawfly (J. integer) is attacking pussy willow at Laurel.

PECAN

FALL WEBWORM (Hyphantria cunea Drury)

New York. N. Y. State Coll. Agr. News Letter (June 17): The fall webworm was hatching on June 10 and was making tents on June 12 in Orange County.

Delaware. L. A. Stearns (June 20): First appearance of fall webworm in Newark.

Maryland. E. N. Cory (June 22): The fall webworm is attacking a variety of shade and ornamental trees at College Park.

Tennessee. G. M. Bentley (June 15): The fall webworm is in evidence earlier this year than for several years. Usually this insect becomes numerous late in the summer or early in the fall, but many outbreaks have already been reported this year.

Alabama. J. M. Robinson (June 20): The first-generation larvae of the webworm have been active at Auburn and in central Alabama on pecan foliage for 2 weeks.

Mississippi. O. Lyle (June 22): The fall webworm is generally distributed over the State, attacking pecans and persimmons especially.

#### WALNUT CATERPILLAR (Datana integerrima G. & R.)

Mississippi. E. Gladney (June 22): The first colony of walnut caterpillars observed this year was on May 27 at Ocean Springs. On June 19 I observed considerable damage to pecans in Jackson and Harrison Counties. The caterpillars are more numerous than last year.

#### AN UNDERWING (Catocala viduata Guen.)

Mississippi. O. Lyle (June 22): Worms were attacking pecans at Clarksdale on June 21.

#### BLACK PECAN APHID (Melanocallis caryaefoliae Davis)

Mississippi. E. Gladney (June 22): The black pecan aphid has appeared in Jackson and Harrison Counties.

#### PHYLLOXERA (Phylloxera spp.)

Mississippi. O. Lyle (June 22): Damage by P. devastatrix Perg. on pecans was reported by Inspector Jack Milton at Vicksburg on June 5. A severe infestation of P. notabilis Perg. on pecans at Cleveland was reported on June 5.

#### CITRUS

##### ORANGE TORTRIX (Tortrix citrana Fern.)

California. E. J. Ryan (June 24): The orange tortrix was taken feeding on a loquat tree (Eriobotrya japonica) growing on a residential property in Los Angeles. A considerable portion of the fruit was damaged.

##### GREEN CITRUS APHID (Aphis spiraeicola Patch)

Florida. J. R. Watson (June 20): Small colonies of the citrus aphid were in evidence on young growth from Alachua County southward.

CALIFORNIA RED SCALE (Chrysomphalus aurantii Mask.)

California. H. J. Ryan (June 17): Red scale infestations increased rapidly in Los Angeles County during the warm winter, but in early spring there was a noticeable decrease in emergence and present indications are that infestations generally will be little, if any, worse than last year, although considerably heavier than normal.

COTTONY-CUSHION SCALE (Icerya purchasi Mask.)

Arizona. C. D. Lebert (June 24): Several new infestations of the cottony cushion scale have been discovered in and around Phoenix on ornamentals and ornamental citrus. Vedalia beetles (Rodolia cardinalis Muls.) are placed in each locality for control.

CITRUS RUST MITE (Phyllocoptes oleivorus Ashm.)

Florida. J. R. Watson (June 20): Up until the last few days the weather has been dry over most of the citrus belt, with the result that heavy infestations of rust mites were built up on citrus.



## TRUCK - CROP INSECTS

SEED CORN MAGGOT (Hylemyia cilicrura Rond.)

- Indiana. J. J. Davis (June 25): The corn seed maggot was destructive to corn in Tippecanoe, Tipton, and La Porte Counties the first few days in June. These infestations were found in early planted corn that did not germinate promptly because of the cool, wet weather.
- Michigan. R. Hutson (June 19): Some of the heaviest infestations of seed corn maggot ever seen have been reported from Charlotte on peas and beans.
- Wisconsin. E. L. Chambers (June 20): Seed corn maggots are unusually severe throughout the State, requiring replanting of beans and corn in a great many places.
- Minnesota. A. G. Ruggles (June 21): The seed corn maggot is moderately abundant. A few reports of injury where corn germinated slowly were received.
- North Dakota. J. A. Munro (June 23): The corn seed maggot caused heavy damage to several fields of wheat and corn in the vicinity of Selfridge, Sioux County, on June 10. On June 21 it was causing moderate injury to a field of corn in Burleigh County, in the vicinity of Wilton, McLean County.
- Nebraska. M. H. Swenk (June 14): The seed corn maggot was repeatedly reported as destroying planted seed corn from Antelope, Boone, and Sherman Counties during the last week in May.
- Idaho. C. Wakeland (June 22): Stands of peas in the Donnelly area, Valley County, have been thinned materially and a few fields plowed up because of the attack of the seed corn maggot. This is the first record we have of this insect attacking peas. The seed corn maggot has also caused injury to bean stands in Jerome and Twin Falls Counties.
- Utah. G. F. Knowlton (June 17): Seed corn maggots have injured germinating beans and corn in Utah County.

A TORTRICID (Ablabia longana Haw.)

- Oregon. W. D. Edwards (June): Emerged at Corvallis on June 17; oviposition, June 20. Attacking hops and flax in Willamette Valley.

STRIPED CUCUMBER BEETLE (Diabrotica vittata Fab.)

- Virginia. H. G. Walker (June 25): Striped cucumber beetles have been very abundant in some fields of cucumbers and cantaloups in Norfolk, but very scarce in other fields.
- Ohio. B. J. Landis (June 24): Striped cucumber beetles appeared in numbers on squash and citron at Columbus from June 1 to 3.

Wisconsin. E. L. Chambers (June 20): The striped cucumber beetle has been more abundant this summer than for several years and is doing serious damage to cucurbits everywhere, except where control measures are being persistently carried on.

Alabama. J. M. Robinson (June 20): The striped cucumber beetle is active on squash and pickles at Auburn.

Mississippi. C. Lyle (June 22): Striped cucumber beetles are reported as generally abundant over the State, injuring melons especially.

Oklahoma. F. A. Fenton (June 24): The striped cucumber beetle is causing severe damage to cucumbers and squash.

#### BLISTER BEETLES (Meloidae)

South Carolina. W. C. Nettles (June 21): Striped blister beetle reported attacking soybeans and dahlias.

Alabama. J. M. Robinson (June 20): Epicauta pennsylvanica DeG. and Macrobasis unicolor Kby. were destroying 3 acres of Irish potatoes in Fayette County. E. cinerea marginata Fab. was destroying beans at Leroy.

Mississippi. C. Lyle and assistants (June 22): Numerous complaints of blister beetles have been received during the month. E. Lemniscata Fab. was reported from Ethel on June 7 and from Belden on June 17. M. unicolor was reported from Mashulaville, Edinburg, Weir, and Noxapater. Irish potatoes were suffering most severely, with tomatoes being attacked at one place. Blister beetles are attacking soybeans and garden crops on several properties in the vicinity of Grenada.

Kansas. H. R. Bryson (June 27): Blister beetles were reported to be causing injury to potatoes at Ada on June 16.

#### MARGINED SOLDIER BEETLE (Chauliognathus marginatus Fab.)

Ohio. J. S. Houser (June 10): A correspondent at Germantown reports that the margined soldier beetles first ate the center of young corn seedlings and later fed on the leaves. Serious damage was done to lima beans. Alfalfa and weeds were also attacked.

#### FALSE CHINCH BUG (Nysius ericae Schill.)

Idaho. H. E. Jaques (June 17): False chinch bugs were abundant in northern counties last week.

Utah. G. F. Knowlton (June 20): False chinch bugs are damaging turnips, beets, and radishes in one garden at Enterprise.

SOUTHERN GREEN STINK BUG (Nezara viridula L.)

Florida. J. R. Watson (June 20): The southern green stink bug has been more common than usual at this season of the year. However, it was about 50 percent parasitized by Trichopoda pennipes Fab., which is a higher parasitization than usual.

GARDEN FLEA HOPPER (Halticus citri Ashm.)

Virginia. H. G. Walker (June 24): Garden flea hoppers have been from moderately to very abundant on cantaloups, beets, carrots, beans, and lettuce in fields near Norfolk.

MEADOW FROGHOPPER (Philaenus leucophthalmus L.)

New Jersey. T. J. Headlee (June 21): We have had a most extraordinary outbreak of spittle insects occurring on legumes, particularly sweetclover and alfalfa, and also on weeds. We have had some outbreaks on strawberries and less on raspberries and blackberries. The species concerned in this outbreak is P. leucophthalmus and about five of its varieties.

Delaware. L. A. Stearns (June 11): P. leucophthalmus is unusually prevalent on alfalfa, clover, and whitetop. Nymphs in spittle masses were three-fourths mature on May 29. First adults appeared on June 11. Infestations were heavy throughout northern New Castle County, but light in Kent and Sussex Counties. Several color varieties are represented.

## SPRINGTAILS (Collembola)

Utah. G. F. Knowlton (May): The springtail Achorutes matus Folsom was abundant on strawberry plants at Provo on May 23. Onychiurus sp. was reported on May 30 as destroying germinating beans at Alton. (Det. by J. W. Folsom.)

Indiana. J. J. Davis (June 25): Springtails were reported as destructive to 15 acres of alfalfa seedlings at Muncie on May 27.

GARDEN CENTIPEDE (Scutigera immaculata Newp.)

California. A. E. Michelbacher (June 21): The garden centipede has apparently been more destructive this year than heretofore. Many field crops, as well as greenhouse plantings, have been injured considerably. During the past week at Alvarado, I examined a portion of a potato planting that was being severely damaged. This is the first time I have ever observed potatoes being injured by this pest.

POTATO AND TOMATOCOLORADO POTATO BEETLE (Leptinotarsa decemlineata Say)

New Jersey. C. H. Hadley (June 5): First adults of the Colorado potato beetle observed today, attacking tomato at Moorestown.



Delaware. L. A. Stearns (June): First adults observed on small potato plants at Newark on May 30. Infestation general by June 15.

Florida. J. R. Watson (June 20): The Colorado potato beetle attacked plantings of eggplants in Gainesville in large numbers.

Ohio. J. S. Houser (June 19): The damage by the Colorado potato beetle to tomatoes in the Marietta truck growing district has been considerable this year. Not only is the foliage eaten, but some of the young tomatoes are nipped and the value of the fruit is thus destroyed. Some growers have have been obliged to spray or dust.

B. J. Landis (June 24): Colorado potato beetles were numerous at Columbus June 10. First pupae were observed on June 17.

Alabama. J. M. Robinson (June 20): The Colorado potato beetle is abundant on late potatoes, tomatoes, eggplant, and other solanaceous plants, cultivated and wild, throughout the State.

North Dakota. J. A. Munro (June 18): Colorado potato beetle moderately abundant at Fargo.

Iowa. C. J. Drake (June 24): The Colorado potato beetle has been doing considerable damage to tomato plants in large plantings in the vicinity of Muscatine and Cedar Rapids. It is also found on potatoes, but not in such large numbers as on tomato.

#### CORN EAR WORM (Heliothis obsoleta Fab.)

Ohio. J. S. Houser (June): First adult of the season observed at Marietta on June 12. This insect was flushed from a tomato plant. Although a careful watch has been maintained, no eggs have been seen. Adults have not been attracted to baits or to a trap light, although both methods are operated continuously.

South Carolina. F. Sherman (June 21): The corn ear worm is more abundant in tomato fruits at this early season than in most years. No nearby corn is yet in silk, which I believe to be a factor.

Mississippi. C. Lyle (June 22): The corn ear worm has caused more than usual damage to tomatoes at this time of the year. Inspector G. L. Bond reports that it was so abundant in a field of corn near Pascagoula that all the top leaves were cut back half their length.

Kansas. W. T. Emery (June 17): The first eggs on silks of sweet corn in the Kansas State Agricultural College experimental plots at Manhattan were observed today.

Oklahoma. F. A. Fenton (June 24): The corn ear worm is causing light injury to beans, tomatoes, and corn. The population is very small. Two adult males have been recently collected in the trap light.

California. J. C. Elmore (June 19): Tomato growers in Orange County say that the tomato fruit worm is unseasonably abundant this year. One parasite has been observed.

### THREE-CORNERED ALFALFA HOPPER (Stictocephala festina Say)

Mississippi. C. Lyle (June 22): The three-cornered alfalfa hopper was girdling tomato plants at Starkville on June 5. The damage was very similar to that done on alfalfa.

### POTATO APHID (Illinoia solanifolii Ashm.)

Virginia. H. G. Walker (June 25): The pink and green aphid is becoming rather abundant in some fields of potatoes, eggplant, and tomatoes at Norfolk.

Ohio. B. J. Landis (June 14): The pink and green aphid on tomato is extremely numerous at Columbus.

### BEANS

#### MEXICAN BEAN BEETLE (Epilachna corrupta Muls.)

Connecticut. N. Turner (June 24): This beetle emerged from hibernation about two weeks later than usual.

New Jersey. E. Kostal (June 17): The Mexican bean beetle was first noted on garden beans on June 8 in Monmouth County. This is 2 weeks later than the average date for the past 4 years.

Delaware. L. A. Stearns (June 5): Overwintered adults observed in several localities on this date; infestation about normal on June 19.

Maryland. J. A. Hyslop (July 1): Larvae extremely numerous at Silver Spring. No pupae observed.

Virginia. W. J. Schoene (June 20): The Mexican bean beetle has been reported in larger numbers than usual from different sections of the State.

H. G. Walker (June 25): The Mexican bean beetle is moderately abundant at Norfolk. About 35 percent survived the winter and emerged from our hibernation cage.

F. F. Smith (June 3): Although beans were present in gardens in the residential section of Clarendon during the latter part of April, the first adult beetle was not noted until May 4.

Ohio. E. W. Mendenhall (June 12): The Mexican bean beetle has put in its appearance in Springfield and some patches of beans are very badly damaged.

B. J. Landis (June 24): On June 10 adults of the Mexican bean beetle were feeding extensively on young soybeans at Columbus.

H. C. Mason (June 24): Fourth-instar bean beetle larvae are quite numerous at South Point and a few scattered pupae are appearing. Heavy rainfall and cool weather at South Point has retarded the development of the beetle.

Indiana. J. J. Davis (June 25): The Mexican bean beetle has been prevalent throughout the southern part of the State and reports are now being received from many localities in the northern half.

South Carolina. W. C. Nettles (June 21): The Mexican bean beetle is complained of as worse than heretofore near the coast.

C. O. Bare (June 15): Typical Mexican bean beetle injury to bean foliage on 10 plants in a back-yard garden in Charleston County was found and 7 larvae were present at the time of examination.

Alabama. J. M. Robinson (June 20): The Mexican bean beetle is generally very abundant over the central and northern parts of the State.

Mississippi. C. Lyle (June 22): Many complaints of the Mexican bean beetle have been received throughout the month. Undoubtedly weather conditions have been rather favorable for it. Two new counties in the southern part of the State, Covington and Jones, are infested for the first time.

#### BEAN LEAF BEETLE (Cerotoma trifurcata Forst.)

Virginia. F. F. Smith (June 3): Bean leaf beetle adults are numerous and causing extensive injury to a planting of lima beans near Falls Church.

Alabama. J. M. Robinson (June 20): Bean leaf beetles are active at Leroy on beans.

Mississippi. C. Lyle (June 22): Injury to the roots of beans by larvae was reported from Lexington on June 4, and to bean foliage by adults from Hattiesburg on June 20.

#### LIMA BEAN VINE BORER (Monoptilota pergratialis Hulst)

Mississippi. M. L. Grimes (June 22): Injury to beans by the lima bean vine borer was observed at Meridian on June 4.

#### PEAS

#### PEA APHID (Illinoia pisi Kalt.)

Connecticut. N. Turner (June 24): Pea aphids are reported as very abundant in two large fields at New Haven.



New York. N. Y. State Coll. Agr. News Letter (June): Pea aphids are showing up on peas to some extent in Niagara County. One cannery imported ladybeetles and liberated them in pea fields in an endeavor to control the aphids. Some canners are dusting.

Ohio. T. H. Parks (June 26): A telephone call today reports that the pea aphid is badly injuring peas grown for a canning factory at Wauseon.

Indiana. J. J. Davis (June 25): The cool spring has been unusually favorable to aphids, which are exceedingly abundant on garden crops, especially peas.

Michigan. R. Hutson (June 11): The pea aphid is fairly abundant on alfalfa at Lakeview, Vestaburg, Frankfort, and Fremont. Also observed on peas at Ithaca on May 20, but only a few winged migrants were present.

Wisconsin. E. L. Chambers (June 20): Reports received from all over the State wherever peas are grown extensively for canning, indicate serious infestations in spots and an abundance of them on alfalfa.

J. E. Dudley, Jr., (June 18): A heavy infestation of aphids in alfalfa in southern Wisconsin followed a generally cool, wet spring, which is not supposed to be favorable for rapid multiplication of the insect. Heavy and general flights occurred late in May to peas. Infestation built up rapidly but was reduced by rainstorms and cool weather early in June; again built up rapidly following several warm, humid days, until many fields of peas less than a foot high were threatened with serious injury. The prolonged recent rains have again reduced the infestation considerably.

North Dakota. J. A. Munro (June 18): The aphid is abundant on sweet peas in Fargo and vicinity.

Kansas. E. T. Jones (June 29): In view of the favorable conditions for aphid development, sweepings made from June 14 to 24 in alfalfa fields in nine counties in eastern Kansas have shown a remarkable scarcity of aphids. In general the aphid population, which was increasing in April, has dropped back to a low point. Predatory insects which were very abundant two months ago are now conspicuously absent. Presumably the large numbers of ladybeetles and nabids (Nabis ferus L.) present in April have been reduced to practically none through starvation.

Mississippi. C. Lyle (June 22): Considerable damage to peas by the pea aphid was reported from Hamilton on June 19.

Idaho. C. Wakeland (June 22): Pea aphids are almost entirely absent from the pea fields of northern Idaho this year. Parasitization was very heavy last summer, so that the hold-over population of the aphid was light. Ladybeetles hibernated successfully in enormous numbers and migrated to pea fields early, so there is little possibility of pea aphid populations increasing sufficiently to cause any damage.

Utah. G. F. Knowlton (June 22): Pea sphids are causing some injury to field peas in Box Elder County.

### CABBAGE

#### CABBAGE MAGGOT (Hylemyia brassicae Bouché)

New York. N. Y. State Coll. Agr. News Letter (June): The cabbage maggot has occasioned severe damage in Niagara, Wayne, and Ontario Counties.

North Carolina. C. H. Brannon (June 20): The cabbage maggot is causing tremendous damage in the mountain cabbage sections, and is especially destructive to commercial plantings of cabbage in Avery, Macon, and Jackson Counties.

Wisconsin. E. L. Chambers (June 20): Cabbage maggots have seriously injured cabbage and radishes, and some truck growers complain they have lost their crops despite repeated treatments.

#### CABBAGE APHID (Brevicoryne brassicae L.)

Indiana. J. J. Davis (June 25): Cabbage aphid has been abundant during the month on cabbage at Crawfordsville, Marengo, and elsewhere in the State.

North Dakota. J. A. Munro (June 18): The cabbage aphid is abundant in Fargo and vicinity.

#### HARLEQUIN BUG (Murgantia histrionica Hahn) 2/

Virginia. H. G. Walker (June 25): The harlequin bug, although present, has been very scarce this spring at Norfolk.

#### DIAMOND-BACK MOTH (Plutella maculipennis Curt.)

Virginia. H. G. Walker (June 25): Larvae of the diamond-back moth are beginning to appear in moderate numbers in some fields of cabbage at Norfolk.

Ohio. B. J. Landis (June 24): First diamond-back moth observed in field June 5 at Columbus.

Colorado. G. M. List (June 22): The larvae of the diamond-back moth are very numerous in the western part of Colorado. In the Grand Junction area they have developed in large numbers on whitetop, or perennial peppergrass, a noxious weed in that region. Cabbage is being rather severely injured in some localities.

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2/ In the note on M. histrionica by B. J. Landis and H. C. Mason, on page 143 of the last number of the Insect Pest Survey Bulletin, the place of observation was South Point, Ohio, not Columbus.

Utah. G. F. Knowlton (June 7): Diamond-back moths are heavily attacking mustards in various parts of northern Utah. At North Ogden they are heavily attacking whitetop.

#### CABBAGE LOOPER (Autographa brassicae Riley)

Virginia. H. G. Walker (June 25): Larvae of the cabbage looper are beginning to appear in moderate numbers in some fields of late cabbage.

#### MELONS

##### PICKLE WORMS (Diaphania spp.)

Florida. J. R. Watson (June 20): D. hyalinata L., and D. nitidalis Stoll, are becoming very numerous, as usual, this time of the year. At least 75 percent of the squashes, cucumbers, and cantaloups are infested.

Mississippi. C. Lyle (June 22): The pickle worm, according to inspector N. L. Douglass, has been reported from several localities in Yalobusha and Grenada Counties. A specimen was received from Shuqualak, Noxubee County, on May 28 and adults were collected at lights at State College, Oktibbeha County, on June 14.

##### HORNED SQUASH BUG (Anasa armigera Say)

Mississippi. C. Lyle (June 14): Severe damage to melon vines was reported from Meridian on June 14.

#### CARROT

##### CARROT BEETLE (Ligyrus gibbosus DeG.)

Illinois. W. P. Flint (June 21): A very heavy flight of adults of the carrot beetle observed in the southern third of the State. This beetle is very abundant on ragweed and is causing severe damage to young corn on bottom land.

Michigan. R. Hutson (June 19): The carrot beetle was reported at Manchester on June 17 as injuring carrots. This beetle had been very common for the past 2 years on everything but carrots.

Minnesota. A. A. Granovsky (June 21): The carrot beetle is very common in several sections of the State. The beetles are injuring carrots and other truck crops. One large planting of perennial coreopsis near Minneapolis was completely ruined by the adults feeding on the roots.

Missouri. L. Haseman (June 26): The carrot beetle has been more abundant this year than I have ever seen it in Missouri. It is even attracting attention on the golf greens in Columbia.

Kansas. H. R. Bryson (June 27): The carrot beetle is reported to be abundant, causing injury in a garden at Coolidge. A correspondent stated that the same garden had been injured in previous years.



SWEETPOTATOSWEETPOTATO LEAF BEETLE (Typophorus viridicyaneus Crotch)

North Carolina. C. H. Brannon (June 13): The sweetpotato leaf beetle is very abundant on sweetpotatoes in Currituck County.

A TORTOISE BEETLE (Metriona bivittata Say)

Delaware. L. A. Stearns (June 20): Adults abundant on sweetpotato at Laurel, where they are feeding considerably. Eggs have been deposited but none have hatched.

SWEETPOTATO FLEA BEETLE (Chaetocnema confinis Crotch)

Virginia. H. G. Walker (June 25): The sweetpotato flea beetle was reported as being very abundant in some sweetpotato fields at Norfolk early in June.

A WEEVIL (Calomycterus setarius Roelofs)

Pennsylvania. T. L. Guyton and A. B. Champlain (June 17): Specimens were brought to the Department office by a resident of Mechanicsburg, who complained that they were damaging his sweetpotato plants. As the species was not represented in our collection we visited the truck patch for more material. We also examined the general locality. We found the beetle abundant on yarrow, generally scattered on the flower, and quite plentiful on the new sweetpotato plants. This is the first record of this insect from Pennsylvania. (Det. by L. L. Buchanan.)

ONIONONION MAGGOT (Hylemyia antiqua Meig.)

New York. M. C. Richards (June 17): Onion maggots are causing serious losses to many growers in Nassau County.

Wisconsin. E. L. Chambers (June 20): Reports of injury to onions have been more common this spring than for several years. Some report complete crop failure in smaller patches.

Utah. G. F. Knowlton (June 26): Onion maggots have killed 95 percent of the onions in one garden patch at Logan. Reports of injury to onions in several parts of Utah County have also been received.

STRAWBERRYSTRAWBERRY LEAF ROLLER (Ancylis comptana Froel.)

Indiana. J. J. Davis (June 25): The strawberry leaf roller has been reported from all parts of the State, and apparently is more abundant than normally.

Idaho. R. W. Haegele (June 19): Infestation of the strawberry leaf roller is severe in many fields in Canyon County, reducing the yield of crop.

Utah. G. F. Knowlton (June 7): Strawberry leaf rollers are now found in all stages from the moth to nearly mature larvae. (June 17): Moths are abundant at Hobbie Creek.

PALE-STRIPED FLEA BEETLE (Systema taeniata blanda Melsh.)

Ohio. T. H. Parks (June 25): One of the nursery inspectors brought in pale-striped flea beetles, stating that they had almost destroyed strawberry plants in a new planting near Mount Vernon in Knox County.

E. G. Mendenhall (June 26): The pale-striped flea beetle found badly infesting strawberry plantations at Mount Gilead in Morrow County.

STRAWBERRY WEEVIL (Anthonomus signatus Say)

Connecticut. B. H. Walden (June 20): It was estimated that the strawberry weevil damage to a 3-acre field at Burlington, Hartford County, was 20 percent. They are more abundant than in an average year.

EARLY STRAWBERRY SLUG (Empria fragariae Rohw.)

Nebraska. M. H. Swenk (June 14): On June 7 the early strawberry slug was reported to be working on the leaves of strawberry plants in Holt County.

PEPPER

PEPPER WEEVIL (Anthonomus eugenii Caño)

Florida. J. R. Watson (June 20): The pepper weevil, whose appearance in Florida was announced last month, has continued to build up a heavy infestation. By the first of June it was causing losses of at least 80 percent of the crop in Manatee County, where it was found. Scouting in adjoining counties failed to reveal its presence.

SUGAR BEETS

BEET LEAFHOPPER (Eutettix tenellus Bak.)

Idaho. R. W. Haegele (June 19): The spring flight of the beet leafhopper started on June 4, resulting in from one to six bugs per beet plant. The infestation is heavy on tomatoes, beans, and beets in most gardens in the Parma district.

Utah. G. F. Knowlton (June 12): Beet leafhoppers are now increasing in some areas in northern Utah. Some severe curly top is evident in most beet fields examined recently in Davis and Weber Counties. (June 17): Many tomato plants are severely affected with curly top at Santa Clara. (June 21): A small percentage of the beets in Cache County already show

severe curly top where beet leafhoppers are becoming increasingly abundant.

### TOBACCO

#### TOMATO WORM (Phlegethontius sexta Johan.)

Georgia and Florida. F. S. Chamberlin (June 19): Tomato worm infestations in the shade-grown tobacco district of northern Florida and the flue-cured tobacco section of southern Georgia are considered about normal.

#### POTATO TUBER WORM (Gnorimoschema operculella Zell.)

Georgia. F. S. Chamberlin (June 20): Only one infestation of commercial importance observed this season in tobacco. This one infestation of splitworm is located at Norman Park.

#### TOBACCO BUDWORM (Heliothis virescens Fab.)

Georgia and Florida. F. S. Chamberlin (June 20): Tobacco budworms appear to be more abundant than usual in the northern Florida tobacco district but about normal in southern Georgia.

#### POTATO STALK BORER (Trichobaris trinotata Say)

North Carolina. C. H. Brannon (June 26): The potato stalk borer has appeared in destructive numbers on tobacco in Onslow County. The infestation is spotted and is confined largely to one field. This species was reported from Onslow County in 1932 as the first recorded instance of attack on tobacco.

### C O T T O N I N S E C T S

#### BOLL WEEVIL (Anthonomus grandis Boh.)

South Carolina. W. C. Nettles (June 21): Coincident with earlier fruiting than usual, reports indicate more boll weevil damage than usual this early in the season.

Clemson Agr. Coll. Ext. Serv. News Letter (June 3): Weevils are reported as abundant in many of the coastal counties. County agents report large variations in the number of adult weevils found per acre, stating that often several fields would be visited before weevils were found; in other fields as many as 3,000 weevils per acre might be found.

F. F. Bondy and C. F. Rainwater (June 22): Emergence from hibernation is probably about complete. A few fields are fairly well infested, but the heat and dry weather are killing many of the weevil larvae in the squares on the ground. Some weevil pupae have been observed and the first generation will soon be out.



Georgia. T. L. Bissell (June 19): The boll weevil is injurious at Experiment. Punctured squares containing half-grown larvae are falling from early cotton.

C. H. Alden (June 20): Boll weevils are scarce at Cornelia.

Alabama. J. M. Robinson (June 20): The cotton boll weevil is moderately abundant in central and southern Alabama. Weevils have been reported as earlier and more numerous than usual in the Tennessee Valley near Huntsville.

Mississippi. C. Lyle (June 22): The boll weevil is already appearing in large numbers in many cotton fields. Examinations made by State Plant Board inspectors in 124 fields in 37 counties during the week ended June 15 showed weevils present on 84 farms, with an average of 192 weevils per acre on 65 farms, and an infestation of  $9\frac{1}{2}$  percent on 19 farms where squares were large enough to be counted. Weevils are already present in Tippah and Tishomingo Counties on the Tennessee border, which is usually the last part of the State to become infested each season.

E. W. Dunnam (June 22): Boll weevils are appearing in great numbers in early cotton, especially near wooded areas, in Washington County and adjoining counties in the Delta. Practically no weevils can be found in large open fields of late cotton.

H. C. Young (June 29): The infestation in 10 Oktibbeha County fields averaged 22.1 percent, as compared to 8.7 percent in similar fields a year ago.

M. C. Ewing (June 29): In twelve fields in Forrest County the average infestation was 10.2 percent, as compared to 17.5 percent for the week ending June 30, 1934.

Louisiana. W. E. Hinds (June 7): H. B. Brown, who has charge of cotton production at the Baton Rouge station, reports that he and his assistants have recently gathered up to 100 or more weevils per acre from some of their early planted plats of cotton. This indicates a rather heavy weevil survival.

R. C. Gaines (June 22): Some first-generation weevils emerged during the past week. (June 29): The average square infestation in 34 untreated plots was 9.5 percent. The infestation was sufficiently high to make poisoning necessary for approximately one-third of the plots that will be treated. Indications are that a large proportion of the acreage in this territory will be poisoned this season. Considerable commercial poisoning with airplanes and ground machines has already been done.

Oklahoma. C. F. Stiles (June 21): Cotton is very late in the boll weevil section of Oklahoma, which comprises the eastern two-thirds of the State. Up to and including June 19, a total of 25 weevils had emerged from hibernation cages, out of a total of 25,000 installed in the fall of

1934. This is compared to 198 out of 28,000 installed in the fall of 1933, and 22 out of 35,000 installed in the fall of 1932. Weevils are just now beginning to make their appearance in the fields. In one field at Eufaula, we failed to find any weevils on June 6. On June 10 they were found at the rate of 10 per acre, and on the 12th at the rate of 75 per acre. In Okmulgee County they average 80 per acre. In Atoka County only one field examination was made and weevils averaged 280 per acre. In McCurtain County they varied from 20 to 330 per acre.

Texas. H. J. Reinhard (June 22): Weather has continued to be very favorable for boll weevil multiplication throughout central and southern Texas. In some fields situated near woods or other favorable hibernation quarters 50 percent of the squares have been punctured.

K. P. Ewing and R. L. McGarr (June 22): Infestation records made in two fields in Calhoun County show an average of 46.4 percent of the squares punctured by the boll weevil. These fields probably represent the maximum infestation in the county, as they are located close to woods in a creek bottom. However, weevils and punctured squares are very noticeable in many fields in the open prairie.

#### BEET ARMYWORM (Laphygma exigua Hbn.)

Texas. H. J. Reinhard (June 22): On June 3 the beet armyworm was reported as seriously damaging alfalfa and cotton in Reeves County. Sweetclover and several other crops were also attacked.

New Mexico. J. S. Brock (June 3): The beet armyworm is doing considerable damage to young cotton, Indian corn, alfalfa, and garden and truck crops in the irrigated valleys of New Mexico. The first appearance of the armyworm was reported in the Mesilla Valley about May 20. Part of the young cotton crop is being replanted and various poisons are being used in an effort to control the pest.

Arizona. T. C. Barber (May 29): On May 27 a survey was made in the neighborhood of Safford and it was found that a little green worm (probably the beet armyworm), which has recently been very active in the various cotton districts, had inflicted damage generally to the seedling cotton. In most cases this injury had not materially reduced the stand, but the cotton had been frequently set back at least a week or 10 days in recovering from the injury. The invasion of the worms was apparently almost ended, as considerable searching was necessary to find a few specimens for our collection. This contrasted with conditions of the preceding week, when several of the worms in all sizes could be found in every group of seedlings. In only one case was absolute destruction of the cotton stand reported, one man stating that he was going to have to replant 40 acres. In several cases the stand appeared to be materially injured, but in many cases the terminal buds of the seedlings were uninjured, and in the course of time would produce fresh foliage.



## CUTWORMS (Noctuidae)

Arizona. T. C. Barber (May 29): The most drastically injured cotton observed on a survey around Safford was a field where cutworms were working. It was located about 3 miles west of Safford and consisted of 50 acres of cotton seedlings, of which the western half of the field was destroyed 100 percent, while the eastern half of the field had a good stand. The outbreak had evidently started along the entire western edge of the field and the worms had steadily advanced along the cotton rows to the center, destroying every cotton plant as they advanced. The line of demarcation at the point of farthest advance was plainly visible from the road, about 150 yards distant. Specimens of the cutworms were collected out of the soil along the edge of the line of injury, and considerable fresh damage was visible, indicating that the worm advance was still in progress. All cutworms collected were evidently nearly fully grown, however, and apparently they were about ready to pupate. This indicated that the damage would soon decrease.

Egypt. A. H. Rosenfeld (June 8): The principal entomological feature here for May was the appearance of rather large numbers of eggs of Prodenia sp. in the Northern Delta, during the record-breakingly sustained hot spell of the last week, with smaller numbers, as usual, in the more southerly Delta. In Upper Egypt, also, there were sporadic cases of oviposition, but damage is seldom serious south of Cairo. Under the supervision of Government inspectors and with the cooperation of the planters, hand picking has been apparently effectively carried out and few worms are at present in evidence.

PINK BOLL WORM (Pectinophora gossypiella Saund.)

Texas. R. E. McDonald (May 27): Both of the trap plots at Castolon are now blooming. The first part of the week a pink boll worm was found in a bloom from the Cartledge plot. The plots at Presidio have not yet begun blooming; however, L. B. Coffin found a few blooms, none of which were infested, in stub cotton on two farms.

BOLL WORM (Heliothis obsoleta Fab.)

Louisiana. W. E. Hinds (June 7): This morning I received complaints from a cotton grower located about 14 or 15 miles from Baton Rouge regarding a heavy outbreak of cotton boll worm in his young cotton. Most of these worms are from one-half to two-thirds grown, with very few full-grown worms present. Bolls are beginning to reach the half-grown stage. This outbreak occurs in an area poisoned several times earlier for boll weevil control and where weevil control has been satisfactory.

COTTON LEAF WORM (Alabama argillacea Hbn.)

Texas. H. J. Reinhard (June 22): Since May 23 the cotton leaf worm has continued to increase and spread in the southern counties of the State. By June 15, cotton plants were being ragged. Poisoning operations are under way in the vicinity of Corpus Christi, Gregory, Taft, and Robstown. The present northernmost report of occurrence for the insect in Texas is Williamson County.



## APHIDS (Aphidae)

General. F. F. Bondy and C. F. Rainwater (May): In a limited survey made in May, five species of aphids were found on cotton along the Atlantic seaboard. The green cotton root louse (Anuraphis maidi-radici Forbes) was the most widely distributed, having been found in every section of South Carolina, except the extreme west and northwest, and in the eastern part of Georgia, North Carolina, and southeastern Virginia. In fact, it was found causing injury to cotton in every section scouted except northern Florida. The white cotton root louse (Trifidaphis phaseoli Pass.) was observed in many parts of South Carolina, in eastern North Carolina, and in southeastern Virginia. It becomes more numerous along the seaboard in the northern part of the Cotton Belt and reduces the stand in areas where found. The brown cotton root louse (Rhopalosiphum sp.) was found in certain areas of Virginia, North Carolina, and South Carolina. In every instance but one it was associated with one or both of the other root aphids. In the one field where this species was found alone the injury was comparable to that caused by a heavy infestation of either of the other species. The aerial forms found attacking cotton were Aphis medicaginis Koch. and A. gossypii Glov. A. medicaginis was by far the more serious and was more generally distributed in Georgia, South Carolina, and North Carolina. Its attack is almost always confined to the terminal buds and it is seldom seen on the large leaves, except in cases of extremely heavy infestation. A. gossypii was found only in scattered areas of the States visited, usually on the larger leaves of the cotton.

Mississippi. C. Lyle (June 22): Plant lice are rather abundant on cotton throughout the State, but ladybird beetles are unusually numerous and are expected to easily hold the lice in check.

Alabama. J. M. Robinson (June 20): The cotton aphids have been moderately abundant in Auburn, but are being controlled by parasites and predators. In the Tennessee Valley near Huntsville and in north-central Alabama these insects have been very numerous. As a result of the parasites and predators, particularly convergent ladybeetles (Hippodamia convergens Guer.) the aphids are being controlled.

COTTON FLEA HOPPER (Psallus seriatus Reut.)

Texas. H. J. Reinhard (June 22): Injury to cotton by the cotton flea hopper seems to be quite general in McLennan, Bell, and Burleson Counties.

A CRICKET (Anurogryllus muticus DeG.)

Mississippi. M. L. Grimes (June 22): Injury to cotton by A. muticus was observed on June 5 at Heidelberg.

## FOREST AND SHADE - TREE INSECTS

OBLONG LEAF WEEVIL (Phyllobius oblongus L.)

Ohio. M. W. Blackman (July 1): A defoliator of various trees in Europe, and especially injurious to fruit trees, was first found in this country near Rochester, N. Y., 1923. Last year this beetle was found by J. S. Houser near Painesville, Ohio, and is quite numerous there this year. An examination early in June showed its occurrence over an area some 20 miles long by 10 or 15 miles wide. In places it was very abundant, causing noticeable but not injurious defoliation on several species of maple and elm.

FOREST TENT CATERPILLAR (Malacosoma disstria Hbn.)

Maine. H. B. Peirson (June 22): Severe outbreaks of the forest tent caterpillar are occurring in the southern half of Maine.

Vermont. H. L. Bailey (June 24): The forest tent caterpillat is extremely abundant in spots. Complete defoliation of sugar maple orchards observed or reported in Bennington, Windsor, and Orange Counties. A few larvae had begun spinning cocoons at Bennington on June 19. White ash trees were entirely stripped at Bennington, but red maple was left practically untouched in the midst of defoliated sugar maples.

J. V. Schaffner, Jr. (June 24): On June 7 M. disstria was abundant in the vicinity of Dummerston, Putney, and Bellows Falls. Heavy feeding was noticeable chiefly on red oak, linden, poplar, ash, and paper birch. Between Addison and New Haven Junction heavy feeding was noted on June 6 on red oak, linden, and sugar maple, but it seemed to be in rather small patches.

New Hampshire. J. V. Schaffner, Jr. (June 24): On June 7 M. disstria was abundant at Charlestown and Walpole.

Massachusetts. E. P. Felt (June 25): The forest tent caterpillar is abundant at Williamstown where it is causing from partial to nearly complete defoliation in local areas.

J. V. Schaffner, Jr. (June 24): Very common throughout eastern Massachusetts. The foliage on one large area of oak woodland in Spot Pond Reservation, Stoneham, was severely damaged before it could be sprayed.

Connecticut. M. P. Zappe (June 19): Quite abundant in wooded areas in Salisbury, Canaan, and Colebrook, but not numerous enough to cause extensive defoliation.

New York. E. P. Felt (June 25): The forest tent caterpillar is abundant at Millbrook and Amenia, causing from partial to nearly complete defoliation in local areas.

N. Y. State Coll. Agr. News Letter (June 24): Forest tent caterpillars are pupating in Essex County.

J. V. Schaffner, Jr. (June 24): On June 6 a severe infestation was noted in woodlands near Port Henry. Many trees, especially oak, linden, and ash, were defoliated.

Pennsylvania. A. B. Champlain (June 17): First adults noted feeding June 15, in Dauphin County. Some larvae in field not yet pupated.

Michigan. R. Hutson (June 19): The forest tent caterpillar is causing considerable alarm in the raspberry sections of Cheboygan County. It is extremely abundant in three townships in the southwestern part of the county, where it is defoliating wood lots and red raspberry plantings.

Minnesota. A. G. Ruggles (June 21): A very extensive scourge of these caterpillars is stripping poplars and willows in northeastern part of the State.

#### CANKER WORM (Geometridae)

Connecticut. P. Garman (June 24): Unsprayed orchards in New Haven and Fairfield Counties are completely stripped of leaves in many places by Alsophila pometaria Harr.

M. P. Zappe (June ): Canker worms, chiefly A. pometaria are quite abundant throughout the State, many trees being defoliated in some sections. Northern counties are not as heavily infested as southern.

Massachusetts. J. V. Schaffner, Jr. (June 24): Canker worms A. pometaria were abundant in many localities through the eastern part of the State, principally on shade trees but in some places on apple. Serious defoliation was reported from Newton, Ipswich, Topsfield, and Waltham. Heavy feeding was also reported from many other towns.

Pennsylvania. T. L. Guyton (June 17): A. pometaria is defoliating apple and elm in Lawrence County.

Ohio. T. H. Parks (June 10): Both the fall cankerworm (A. pometaria) and the spring cankerworm (Paleacrita vernata Peck) have been causing much defoliation of elm trees in many northwestern counties. Many beautiful elms are almost stripped of leaves by the hordes of worms. Unsprayed orchards are also being attacked. The infestation extends over the entire northwestern quarter of the State. Sprayed orchards are not being injured.

E. W. Mendenhall (June 12): Spring cankerworms are very injurious in neglected farm orchards in Clark County. Some of the trees are entirely defoliated.

Wisconsin. E. L. Chambers (June 20): Many neglected farm orchards between Waupun and Green Bay were defoliated by cankerworms.

#### SATIN MOTH (Stilpnotia salicis L.)

Oregon. C. A. Cole (June): S. salicis is stripping silver and lombardy poplars of leaves in Clackamas, Marion, Polk, and Yamhill Counties.



GYPSY MOTH (Porthetria dispar L.)

Maine. H. B. Peirson (June 22): The gypsy moth was hatching on May 11 in Acton. It was very abundant in Alfred, Brownfield, and Kezar Falls on June 18.

BAGWORM (Thyridopteryx ephemeraeformis Haw.)

Tennessee. G. M. Bentley (June 19): Prior to 1916 practically no reports came in on this insect and comparatively few infestations were found. Since that year, however, the number of reports has increased each year. Few parasites can be reared from the overwintering forms.

Alabama. J. M. Robinson (June 20): Bagworms have been very abundant generally over the State. The larvae have attacked cotton at Huntsville and have defoliated arborvitae plantings, as well as various ornamental shrubs and deciduous trees at Auburn, Talladega, Wetumpka, and Tallassee.

ASHA MIRID (Neoborus sp.)

Connecticut and Pennsylvania. E. P. Felt (June 22): An ash plant bug, Neoborus sp., has been somewhat common on ash at Stamford, Conn., and also in the Philadelphia area, attracting notice by its abundance.

BEECHWOOLLY BEECH APHID (Phyllaphis fagi L.)

New York. R. E. Horsey (June 20): Woolly beech leaf aphid is quite numerous on the leaves of an ornamental European beech at Rochester.

Maryland. E. N. Cory (June 18): Woolly beech aphid observed on copper beech at Baltimore.

ELMELM LEAF BEETLE (Galerucella xanthomelaena Schr.)

Idaho. R. W. Haegle (June 19): Infestation considerably reduced from outbreak numbers of 1934. Eggs hatching by June 10.

California. H. J. Ryan (July 1): The elm leaf beetle has been found for the first time in Los Angeles County infesting a planting of 14 cork elms and 2 American elms on a ranch about 12 miles from the northern boundary of the county. This is in all probability an extension of the infestations which have occurred for some years in the vicinity of Bakersfield, Kern County. On June 27 approximately 30 percent of the leaves on the cork elms showed injury and larvae were quite numerous. A considerable number of larvae

and pupae were found on the soil at the base of the tree. Adults and fresh egg clusters were rare. According to the ranch foreman, damage was first noted in the summer of 1934 when the cork elms were almost entirely defoliated.

Kern County Agr. Comm. Monthly News Bull. (June 4): We are spraying shade trees for the elm leaf beetle.

LESSER EUROPEAN BARK BEETLE (Scolytus multistriatus Marsh.)

New Jersey. F. M. Wadley (June 10): Found at Belleville and Parsippany.

A BARK BEETLE (Hylurgopinus rufipes Eich.)

Connecticut. B. J. Kaston (June): Adult beetles abundant in Torrington, Riverton, and Winsted, where most of them have entered relatively live branches to breed, starting about June 5. Somewhat less abundant in the vicinity of New Haven, where they started breeding tunnels about June 12.

LIME-TREE LOOPER (Erannis tiliaria Harr.)

Connecticut. M. F. Zappe (June 18): Elm trees in Salisbury and Lakeville villages partially defoliated. Larvae present on practically all trees in woods in Salisbury and Canaan.

ELM LEAF APHID (Tuberculatus ulmifolii Monell)

New York. R. E. Horsey (June 20): A few elm leaf aphids found on American elm at Rochester on June 19. Said to be sometimes numerous in summer but I have never noticed serious injury.

Nebraska. M. H. Swenk (June 14): The elm aphid was reported attacking elms in Gage County the second week in June.

Kansas. H. R. Bryson (June 27): Elm leaf aphids have been very abundant in the State this season. The ladybeetles and their larvae have been responsible for getting this pest under control.

Oklahoma. F. A. Fenton (June 24): A very severe outbreak of the elm leaf aphid. Aphids were so numerous that they caused the elms to shed many leaves that were not curled or discolored.

WOOLLY ELM APHID (Eriosoma americana Riley)

Maryland. E. N. Cory (June 8): Woolly aphid found attacking elm at Laurel.

Ohio. T. H. Parks (June 25): We have received many samples of elm leaves badly infested with the woolly aphid. This pest is more injurious than I have ever seen it on elms and is generally distributed.

### EUROPEAN ELM SCALE (Gossyparia spuria Mod.)

- New York. R. E. Horsey (June 20): A considerable amount of European elm scale on seedling American elms, 20 feet tall. A common pest in and near Rochester, when not kept under control by proper spraying.
- Maryland. E. N. Cory (June 10): Imported elm scale attacking elm at Baltimore.
- Indiana. J. J. Davis (June 25): The European elm scale was reported as destructive to elms at Fort Wayne on May 29.
- Ohio. J. S. Houser (June 15): Many complaints have been received this year. Serious damage to elms set for shade and ornamental purposes is quite common. The young scales have not yet appeared in northern Ohio.

### EUROPEAN FRUIT LECANIUM (Lecanium corni Bouché)

- New York. R. E. Horsey (June 20): A few European fruit lecania on American elm seedlings at Rochester.
- Oklahoma. F. A. Fenton (June 24): The European fruit lecanium hatched in great numbers late in May and most of the crawlers were located on the leaves by May 31. Indications are that this will be a serious pest of elms in certain sections of Oklahoma next year.

### ELM LEAF MINER (Kaliosysphinga ulmi Sund.)

- Maine. H. B. Peirson (June 22): Elm leaf miner abundant on English elm at Springvale.
- New York. E. P. Felt (June 22): The elm sawfly miner has been extremely abundant and injurious to certain Scotch elms at New Rochelle.
- R. E. Horsey (June 20): Very noticeable on a group of seedling or coppice growth of American elms, trees to 20 feet tall at Rochester. It was numerous on this group, some leaves being entirely mined.

### FIR

#### A CURCULIONID (Cylindrocopturus sp.)

- Washington. R. R. Furniss (May): A small weevil, Cylindrocopturus sp., was discovered this month, causing appreciable damage to a naturally seeded, recently thinned 10-year-old stand of Douglas fir near La Grande and in open mature stands in several localities of central-western Washington. What apparently is the same species has been reared by W. W. Baker from Douglas-fir twigs taken near Puyallup.

### BALSAM TWIG APHID (Mindarus abietinus Koch)

- Maine. H. B. Peirson (June 12): The balsam twig aphid is abundant on new growth of balsam fir at Augusta.



HEMLOCKA SPANWORM (Ellopiia athasaria Walk.)

Massachusetts. J. V. Schaffner, Jr. (May): An infestation is heavy over an area of about 10 acres. Many hemlocks were severely defoliated in 1934. Random samples of leaf mold showed a population of approximately 4 pupae per square foot. Moths began issuing on May 24 and emergence has continued to the end of May.

JUNIPERJUNIPER WEBWORM (Dichomeris marginellus Fab.)

Maryland. E. N. Cory (June 10): The juniper webworm is attacking juniper at Halfway.

Ohio. J. S. Houser (June 20): Irish juniper and also some prostrate forms of juniper at Strongville and Ashland are seriously damaged. Reports of damage are becoming more plentiful from year to year.

LARCHLARCH CASE BEARER (Coleophora laricella Hbn.)

General. J. V. Schaffner, Jr. (June 24): Severe infestations persist in stands of both the American and the European larch throughout New England and northern New York. Almost complete browning of the foliage, caused by the feeding, was noted in many localities in New York, Vermont, New Hampshire, Maine, and Massachusetts. In a plantation of European larch at Woodstock, Conn., from 25 to 50 percent of the foliage was browned.

Maine. H. B. Peirson (June 22): The larch case bearer is very abundant generally throughout central and southern Maine. Trees are nearly totally browned.

Vermont. H. L. Bailey (June 24): The larch case bearer is more abundant than was anticipated last month. Every larch throughout wide areas is completely browned.

Connecticut. M. P. Zappe (June 19): This insect has been abundant for several years. This year hardly a tree in Litchfield County has escaped severe injury. Many trees are entirely brown but a few still have a little green foliage. Observed in Salisbury, Canaan, and Norfolk.

LOCUSTLOCUST LEAF MINER (Chalepus dorsalis Thunb.)

Mississippi. C. Lyle (June 22): The locust leaf miner was reported as causing serious damage to young black locust plantings at Grenada and Carrollton on June 14.

MAPLEWOOLLY ALDER APHID (Prociphilus tessellatus Fitch)

New York. C. R. Crosby (May 16): Specimens received from Binghamton, where they were attacking alder.

Maryland. E. W. Cory (June 21): Alder blight aphid attacking maple at Prince Frederick.

NORWAY MAPLE APHID (Periphyllus lyropictus Kess.)

Delaware. L. A. Stearns (June 20): Moderate infestation on Norway maple at Frederica reported; specimen submitted.

MAPLE BLADDERGALL (Phyllocolpa quadripes Shim.)

Vermont. H. L. Bailey (June 24): The bladder maple gall is unusually abundant in Washington County.

Connecticut. W. E. Britton (June 24): Attacking silver maple at Clinton, Devon, Windsor, West Hartford, and Pomfret; normal abundance.

Maryland. E. W. Cory (May 22): Bladder maple gall attacking maple leaves at Baltimore.

OAKA GALL WASP (Neuroterus irregularis O. S.)

Connecticut. E. P. Felt (June 22): The gall wasp N. irregularis developed in immense numbers on several swamp white oaks at Greenwich. The infestation was so severe that practically three-fourths of the normal leaf tissue was transformed into galls and a small branch was almost as heavy as a similar apple branch fairly loaded with fruit.

PINEEUROPEAN PINE SHOOT MOTH (Rhyacionia buoliana Schiff.)

New York. R. E. Horsey (June 20): A slight infestation on mugho pine was described to me on June 15. I visited these pines recently and failed to find any caterpillars. In 1932 severe infestations on young pines in widely separated areas in western New York were reported but I have heard of none lately.

New Jersey. F. A. Soraci (June 24): Adults of the European pine shoot moth were observed on red pine at Trenton as early as June 3.

PINE LEAF MINER (Paralechia pinifoliella Chamb.)

Maine. H. B. Peirson (June 22): Rather heavy infestation of pines on May 25 at Bar Harbor. Abundant in foliage of pitch pine at Berwick on June 18.

New England States. J. V. Schaffner, Jr. (June 24): Severe infestations were noted this month in stands of pitch pine at Brimfield and Natick, Mass., between Glen Falls and Lake George, N. Y., and at Wells and Kennebunk, Maine.

SOUTHERN PINE BEETLE (Dendroctonus frontalis Zimm.)

Mississippi. H. Gladney (June 19): A small infestation of the southern pine beetle is occurring near Ocean Springs.

PINE BARK APHID (Pineus strobi Htg.)

Maine. H. B. Peirson (June 22): Pine bark aphid abundant throughout a 50-acre plantation of white and Scotch pine at Brookbay.

SPRUCESPRUCE GALL APHID (Chermes abietis L.)

New York. R. E. Horsey (June 20): A considerable number of galls caused by this insect found on Norway and white spruce. Most of the galls are green and still growing, but I was surprised to find that a few galls on Norway spruce were cracking open and the adults emerging on June 19. This aphid at times is a serious pest in Rochester. A few galls were also found on Colorado blue spruce, caused by this or a related insect.

A SAWFLY (Neodiprion dyari Rohw.)

Massachusetts. J. V. Schaffner, Jr. (June 24): During the first 3 weeks in June the larvae were very noticeable on pitch pine in many localities through eastern Massachusetts.

WHITE SPRUCE SAWFLY (Neodiprion polytomum Htg.)

Maine. H. B. Peirson (June 22): One adult of the white spruce sawfly was taken at Bar Harbor on June 3.

SPRUCE LEAF MINER (Recurvaria piceaella Kearf.)

Ohio. E. W. Mendenhall (June 4): The spruce leaf miner is quite common in private plantings of blue and Norway spruce and Douglas fir in Urbana.



SWEETBAYA WEEVIL (Prionomerus calceatus Say)

Connecticut. E. P. Felt (June 22): Sweetbay leaves were sent in accompanied by a statement that this weevil had been feeding on the foliage. This insect is a well-known miner of the related sassafras and tulip tree.

WILLOWEUROPEAN WILLOW BEETLE (Plagiodera versicolora Laich.)

Massachusetts. J. V. Schaffner, Jr. (June 25): The imported willow leaf beetle is abundant on willow in suburban towns around Boston. Adults of the first brood are now issuing.

A SPITTLE BUG (Aphrophora salicis DeG.)

Massachusetts. J. V. Schaffner, Jr. (June 25): This imported spittle insect is quite abundant on willow in the suburban towns around Boston.

## I N S E C T S   A F F E C T I N G   G R E E N H O U S E

## A N D   O R N A M E N T A L   P L A N T S

STRAWBERRY ROOT WEEVIL (Brachyrhynchus ovatus L.)

Minnesota. A. G. Ruggles (June 21): Adults of the strawberry root weevil were taken from Duluth, Saint Paul, and Minneapolis. A few good-sized evergreens have been injured by grubs.

Utah. G. F. Knowlton (June 17): Strawberry root weevils have killed third-year strawberries in spots at Hobble Creek, Springville, and Springdale.

GARDEN SPRINGTAIL (Bourletiella hortensis Fitch)

Maine. H. B. Peirson (June 10): The garden springtail is very abundant at Bar Harbor.

CHRYSANTHEMUMCHRYSANTHEMUM GALL MIDGE' (Diarthronomyia hypogaea Loew)

Mississippi. C. Lyle (June 22): The chrysanthemum midge was found on a few plants at Meridian on June 21. This insect is not widely distributed in Mississippi.

IVYMAGNOLIA SCALE (Neolecanium cornuparvum Thro)

New York. E. P. Felt (June 22): Magnolia scale was found breeding in large numbers on Boston ivy at Mamaroneck.

A FULGORID (Ormenis septentrionalis Spin.)

Alabama. J. M. Robinson (June 20): The lantern fly was reported as very abundant on English ivy at Union Springs in Bullock County.

PHLOXPHLOX PLANT BUG (Lopidea davisii Knight)

Maryland. E. N. Cory (June 22): The phlox plant bug has been reported attacking phlox at Hyattsville.

ROSEROSE APHID (Macrosiphum rosae L.)

Nebraska. M. H. Swenk (June 15): The rose aphid was reported attacking rose bushes during the period May 20 to June 15.

Utah. G. F. Knowlton (June 7): Aphids are injuring roses in many parts of northern Utah.

SPINY ROSE GALL (Rhodites bicolor Harr.)

Nebraska. M. H. Swenk (June 14): The spiny rose gall was reported present on rose bushes in Douglas County on May 26.

ROSE CURCULIO (Rhynchites bicolor Fab.)

Utah. G. F. Knowlton (June 17): Rose curculio injury to rose buds was observed at Joseph, Logan, and Brigham.

ROSE SAWFLY (Caliroa aethiops Fab.)

Tennessee. G. M. Bentley (June 19): Many reports of sawflies attacking rose leaves in all parts of the State. Abundance about the same as last year, but 50 percent increase as compared with last month's reports.

SNOWBALLSNOWBALL APHID (Aphis viburnicola Gill.)

Wisconsin. E. L. Chambers (June 20): American varieties of snowball growing throughout the State are heavily infested with aphids this year.

North Dakota. J. A. Munro (June 18): Snowball aphids are abundant in Fargo and vicinity.

Nebraska. M. H. Swenk (June 15): The snowball aphid was reported attacking snowball bushes during the period May 20 to June 15.

## INSECTS ATTACKING MAN AND DOMESTIC ANIMALS

### MAN

#### BLACK WIDOW SPIDER (Latrodectus mactans Fab.)

South Carolina. F. Sherman and W. C. Nettles (June 21): Specimens have been received from various localities.

Mississippi. C. Lyle (June 22): On account of much newspaper publicity great interest has been shown in the black widow spider and dozens of letters regarding it have been received.

Utah. G. F. Knowlton (June 17): Reports of black widow spiders in abundance have been received from Washington County.

Oregon. D. C. Mote (June): One female was collected on February 15; oviposition, March 17, 20, 23; egg hatching, May 17, 27, and June 3 at Corvallis. Laboratory observations.

#### AMERICAN DOG TICK (Dermacentor variabilis Say)

Wisconsin. E. L. Chambers (June 20): Wood ticks apparently much more abundant in the woods of the State than for several summers. Crews of workmen in the white pine stands report considerable annoyance from them.

#### PAJAROELLO (Ornithodoros coriaceus Koch)

California. C. S. Robinson (July 5): This species of tick is causing considerable annoyance and discomfort to campers and field men in the Santa Barbara National Forest. These ticks are commonly found under trees and places where horses and cattle congregate, and people should avoid sleeping or resting in such places.

### CATTLE

#### SCREW WORMS (Cochliomyia spp.)

General. F. C. Bishopp (July 5): The heavy rains and the resulting humidity in certain sections of western Texas during June have created very favorable conditions for the breeding of an enormous number of screw worm flies. Reports from field stations in this area state that ranchmen



face the most severe outbreak in a number of years. Hail storms and floods have killed large numbers of livestock and wild animals, therefore the population of the secondary screw worm fly (C. macellaria Fab.) has been increased enormously. In addition to injuring livestock by infesting wounds initiated by the primary screw worm fly (C. americana Cushing and Patton), C. macellaria has attacked the fleece of many sheep whose wool has become sour or foul as the result of being kept wet by continued rains. In Georgia screw worm cases have been reported from 110 counties but the number of cases in any one county is not large, 140, reported from Thomas county, being the maximum number. As it was not possible to examine all the cases, the species of fly causing the trouble was not determined. Twenty cases attributed to screw worms were reported from 10 counties in South Carolina for the week ending June 22. Specimens of larvae were not obtained in these cases and the species involved was not determined. In Louisiana, Mississippi, and Alabama the infestations are comparatively few. Records obtained from Jefferson Davis and Calcasieu Parishes, La., report 77 cases for the week ending June 22; however, it has been determined that some of these infestations were due to Phormia regina Meig. For the same period 36 counties in Mississippi reported 116 cases, and in Alabama 89 cases were reported from 35 counties. The most severe outbreak of screw worms in the Southeast is in Florida. The number of cases is rapidly increasing and the flies are spreading to new localities. The heaviest infestations occur in the central counties. The total number of infestations in the State has been reported as 23,000, with Sumter County having 2,500, the maximum number for any one county.

#### HORSE

##### HORSE FLIES (Tabanus spp.)

- Delaware. E. A. Stearns (June 18): An abundance of T. daeckei Hine is causing great annoyance to livestock along the coast.
- Missouri. L. Haseman (June 26): During the latter half of June there has been a real outbreak in central Missouri of one species of horse fly annoying cattle and horses, and even attacking man.
- Oklahoma. F. A. Fenton (June 24): Two species of horse flies are unusually abundant. They are T. equalis Hine, an evening flier, and T. erythraeus Hine, a species active during the day.

##### BUFFALO GNATS (Eusimulium spp.)

- North Dakota. J. A. Munro (June 23): During the latter part of May reports from Valley City, in Barnes County, indicated that buffalo gnats were very abundant in pastures and were causing much disturbance among cattle.
- Iowa. C. J. Drake (June 24): The black fly (E. occidentale Towns.) was quite common in northwestern Iowa this spring. In one of the State parks in Sioux County it was impossible for men or horses to remain in the park during the peak of the emergence period. Farmers in the

vicinity of the park reported that they lost many chickens from the bites of flies.

### SHEEP

#### BLACK BLOWFLY (Phormia regina Meig.)

Texas. F. C. Bishopp (July 5): The wool maggot fly has been unusually abundant this season and has caused much trouble to ranchmen.

### HOUSEHOLD AND STORED-PRODUCTS INSECTS

#### TERMITES (Reticulitermes spp.)

Connecticut. N. Turner (June 24): Twenty-seven infested buildings were examined during the past month.

Delaware. L. A. Stearns (June): Serious damage to a dwelling examined at Newark on June 14.

Maryland. E. N. Cory (June 22): The number of calls received in regard to termites in widely scattered portions of the State is increasing. The entire basement floor of a church in Brunswick had to be replaced on account of the activities of R. flavipes Koll.

Tennessee. G. M. Bentley (June 19): From observations and reports, termites are becoming more abundant each year in all parts of Tennessee.

Nebraska. M. H. Swenk (June 14): R. tibialis Bks. was reported to be infesting residences in Nance, Douglas, Seward, and Clay Counties.

Oklahoma. F. A. Fenton (June 24): A large number of reports have been received of termite damage, mostly from the central part of the State.

#### ANTS (Formicidae)

Virginia. H. G. Walker (June 25): Ants rather seriously injured several fields of eggplants near Norfolk by eating off the roots and barking the stems just below the surface of the ground.

Mississippi. C. Lyle (June 22): Many complaints have been received during the month. Most of them are in regard to the fire ants Solenopsis xyloni McCook in flower and vegetable gardens.

Nebraska. M. H. Swenk (June 15): Ants in lawns have been very troublesome during the entire period from May 20 to June 15, but especially during the second week in June. The carpenter ant (Camponotus herculeanus pennsylvanicus DeG.) was reported on May 21 as working in two porches in Nance County.

Kansas. H. R. Bryson (June 27): The kafir ant (S. molesta Say) was reported to be causing injury to seed corn at Manhattan.

LEAD CABLE BORER (Scobicia declivis Lec.)

California. C. K. Fisher (June 4): The lead cable borer has been observed boring into wine barrels in a Fresno winery since about May 21. In 1934 the damage from this species began about April 26.

CERAMBYCIDS (Callidium spp.)

Connecticut. R. B. Friend (June 24): At Winsted C. violaceum L. and C. antennatum Newm. severely attacked white pine lumber that had bark on the edges. Hymenopterous parasites were abundant this month. Adult beetles were very abundant the first part of June.



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